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INTEGRATING ETHICAL VALUES INTO THE S.C.O.R.E. MODEL: A PERCEPTUAL STUDY ON ASSET MISAPPROPRIATION

Zakiyuddin^{1*}, Hanik Susilawati Muamarah²

¹Directorate General of State Assets Management, Ministry of Finance, Aceh, Indonesia

²Polytechnic of State Finance STAN, Ministry of Finance, Jakarta, Indonesia

*Corresponding Email: zakiyuddin18@kemenkeu.go.id

ABSTRACT

Research Originality — This study offers novelty by integrating ethical values into the S.C.O.R.E. model, a theoretical framework that has been developed to explain the underlying factors of fraud which focuses on five key drivers of fraudulent behavior: stimulus, capability, opportunity, rationalization, and ego. and examining their role among central government asset managers in Indonesia, a context distinct from prior research focusing on local government employees using traditional fraud frameworks.

Research Objectives — The research aims to identify key determinants of perceived asset misappropriation among central government asset managers and examine the direct role of ethical values as an inhibiting factor.

Research Methods — Employing a quantitative approach, the study analyzed primary data from 625 civil servants involved in state asset management using structural equation modeling (SEM) to test the relationships between variables.

Empirical Results — The findings showed that opportunity, rationalization, and ego positively associated with asset misappropriation perceptions. Ethical values had a significant negative effect, indicating their deterrent role. However, stimulus and capability were not found to have significant effects. Rationalization emerged as the most influential factor, underscoring the importance of internal justifications in enabling fraudulent behavior.

Implications — The study advances the S.C.O.R.E. model by introducing ethical values as a deterrent factor. It provides practical guidance for public institutions to strengthen ethics-based interventions, such as employee training and awareness programs, to mitigate asset misappropriation risks.

Keywords: Perceived Asset Misappropriation; S.C.O.R.E Model; Ethical Values; Rationalization

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INTRODUCTION

Many people only think fraud happens in business, but non-business areas like government bodies also face similar risks and impacts from fraud (Ginting et al., 2021). Fraud in business organizations that aim to make profit can cause the organization to go bankrupt and even stop operating, as seen in cases such as Enron. Meanwhile, fraud in government organizations can destroy public trust in government institutions (Tagora & Putriana, 2022). These examples show that fraud practices create serious problems that affect different kinds of organizations (Tuanakotta, 2010).

The topic of fraud continues to fascinate researchers due to the ever-increasing number of reported cases. While there are various classifications of fraud, current studies and much of the existing literature broadly categorize fraud into external fraud and internal fraud (Capras & Achim, 2024). External fraud encompasses actions perpetrated by individuals who are not part of the organization and includes schemes such as credit card fraud, investment scams, customer deception, and vendor-related misconduct. In contrast, internal fraud is carried out by the organization's employees and is often termed occupational fraud or corporate fraud (Capras & Achim, 2024). Occupational fraud, as defined by the ACFE (2022), involves employees leveraging their positions to benefit personally by deliberately misusing or exploiting the organization's resources or

assets. Internal actors such as employees, management, and even business owners are increasingly engaging in fraudulent activities (Asmah et al., 2020; Nigrini, 2019; Robinson & Aria, 2018; Zahari et al., 2020).

Occupational fraud or internal fraud can be classified into three main categories: financial statement fraud, corruption, and asset misappropriation (ACFE, 2022). Financial reporting fraud often involves manipulation by management and is considered fraudulent if the report directly or indirectly benefits the perpetrator. Corruption refers to the abuse of entrusted power by officials or public servants for personal gain, encompassing actions that are unlawful and improper, and that violate the duties and rights of other individuals (Transparency International, 2019). Asset misappropriation is an act of dishonesty that occurs when an employee within a government institution unlawfully seizes and conceals government assets to increase personal wealth and uses those assets for personal purposes (Tuanakotta, 2010).

Most previous studies have focused on financial reporting fraud. However, empirical studies indicate that the incidence of asset misappropriation fraud has surpassed that of financial reporting fraud and corruption (ACFE, 2016; 2018; 2020; 2022). According to the 2022 ACFE report, 86% of all reported fraud cases took the form of asset misappropriation. Despite its significant prevalence, research on asset misappropriation fraud remains relatively limited, with most researchers focusing on financial reporting fraud (Koomson et al., 2020).

The creation of the KPK (Komisi Pemberantasan Korupsi), in 2003 highlights the Indonesian government's firm commitment to combating corruption. Cases of corruption crackdowns often make headlines, but reports of occupational fraud are relatively rare. However, individuals involved in fraud often engage in multiple categories of fraud during their employment (ACFE, 2022). The corruption case related to performance allowances within the Ministry of Energy and Mineral Resources, which is being investigated by the KPK, is suspected to have occurred due to individuals manipulating the benefit system, also referred to as the tip of the iceberg of fraudulent actions (BBC, 2023). The prevalence of asset misappropriation-related fraud warrants research attention due to the limited existing studies and insufficient government focus on this issue.

Several studies on asset misappropriation have predominantly examined indicators of asset misappropriation (Feess & Timofeyev, 2020), asset misappropriation in relation to corporate governance (Bakri et al., 2017), and the detection of asset misappropriation through internal auditing mechanisms (Westhausen, 2017). Nonetheless, research examining the factors that actually push people to commit asset misappropriation, as done by Koomson et al. (2020), Mardiah & Jasman (2021), and Nurani & Fuad (2022), is not extensively available.

Managing assets in Indonesia's public sector, like in other countries, is a crucial part of public administration. Public asset management is generally regulated by the Directorate General of State Asset Management in the Ministry of Finance. Over time, the government has introduced various regulations and systems aimed at increasing transparency and accountability of governance in this sector. These efforts have taken the form of strict reporting requirements and the establishment of internal control mechanisms. Despite these efforts, the sector continues to face challenges related to fraud, particularly asset misappropriation. When such violations occur among employees in central institutions, the consequences can significantly affect government finances and organizational operations, as well as damage the government's reputation. We focused on central government employees, for two reasons. First, central institutions manage large number of state assets, including high-value assets. Second, employees working as asset managers often have significant access to these kinds of assets. Thus, understanding employees' perception regarding asset misappropriation can provide valuable and important guidance for designing more effective policies and prevention strategies.

One theoretical framework that has been developed to explain the underlying factors of fraud is the S.C.O.R.E. model (Vousinas, 2019). This model extends the fraud triangle theory (FTT) and fraud diamond theory (FDT) by proposing five key drivers of fraudulent behavior: stimulus, capability, opportunity, rationalization, and ego. However, the application of the S.C.O.R.E. model continues to spark debate due to the lack of empirical evidence supporting its application (Koomson et al., 2020). Currently, the S.C.O.R.E. theory has been applied in research related to fraud in the financial industry in Malaysia (Mohamed et al., 2021), state-owned enterprises in Ghana (Owusu et al., 2022), financial reporting of state-owned enterprises in Indonesia (Achmad et al., 2022), and financial reporting of publicly traded companies in Indonesia (Sari & Nugroho, 2020).

APPLICATIONS FOR PRACTICE

- Asset misappropriation remains a significant challenge in central government institutions, and understanding its drivers is essential for designing effective prevention strategies.
- Government institutions should develop programs that reduce employees' tendency to justify fraudulent actions and discourage status-driven behavior.
- Strengthening internal control systems is also recommended to reduce the opportunities perceived by employees to commit fraud.
- Policymakers should prioritize ethics training to encourage employees to internalize ethical principles in their daily work.

While the five factors outlined in the S.C.O.R.E. model offer a more thorough framework for examining the drivers of fraud, they do not account for all the variables that explain why individuals engage in fraudulent behavior. Moreover, these models have rarely considered ethical values, despite evidence suggesting that ethics significantly influence an individual's propensity to commit fraud (Awang & Ismail, 2018; Said et al., 2017). Empirically, research findings suggest that an individual's ethical values are significantly associated with the factors that contribute to fraud (Awang & Ismail, 2018; Said et al., 2017; Said et al., 2018). Therefore, it is crucial to examine ethical values to ensure consistency with other empirically tested theories (Becker et al., 2016).

Although 86% of fraud cases involved asset misappropriation (ACFE, 2022), empirical studies remain limited, particularly in central government institutions. Previous research in the Indonesian public sector context was limited to local government employees and used the fraud triangle theory (Yusrianti et al., 2020; Tarjo et al., 2024). In addition, empirical studies to test the applicability of fraud frameworks such as the S.C.O.R.E model, or to examine ethical values as other drivers of fraud are still limited. Therefore, this study aims to answer the following research question: "Do the determinants of fraud in the S.C.O.R.E Model and ethical values associate with perception of asset misappropriation in central government institutions?". Therefore, this study sheds light on the determinants of perception of asset misappropriation using the S.C.O.R.E Model framework and on the role of ethical values as potential additional factors.

We use questionnaires to collect primary data from 1,457 central government civil servants across Indonesia and analyze the data using structural equation modelling (SEM). Our findings suggest that opportunity, rationalization, and ego in the S.C.O.R.E model play a significant role in determining perception of asset misappropriation among central government asset managers. We also documented a negative association between ethical values and asset misappropriation, confirming its potential as a fraud determinant and suggesting that strengthening employees' ethical value can help mitigate their intention to commit fraud.

This study contributes to fraud literature, particularly occupational fraud, in three ways. First, while most previous research focused on established fraud theories, such as fraud triangle theory (Yusrianti et al., 2020; Tarjo et al., 2024), empirical evidence is needed to test emerging frameworks, such as S.C.O.R.E Model (Vousinas, 2019). Our study fills this gap by empirically showing that higher perception of opportunity, rationalization, and ego are associated with higher perception of asset misappropriation. Second, previous studies have found that people with low ethical values tend to commit fraud (Awang & Ismail, 2018; Said et al., 2017, 2018), however the integration of ethical value into current fraud models is still limited. We extend the S.C.O.R.E model by adding ethical values as another fraud determinant, and our findings confirm its negative association with perceptions of asset misappropriation. Third, our study focused on central government employees, particularly those working as asset managers, given their higher likelihood of committing asset misappropriation. Therefore, we complement previous studies focusing on local government employees (Yusrianti et al., 2020; Tarjo et al., 2024). As a practical contribution, our findings provide regulators and policymakers with insights to formulate better policies to mitigate and prevent fraudulent activity, particularly asset misappropriation, such as strengthening internal control systems at both institutional and individual levels.

This paper is structured as follows. The next section discusses the literature review and research methodology used in this study. This is followed by an overview of the results and a discussion of their implications. The final section concludes the paper, outlining the study's contributions, limitations, and directions for future research.

LITERATURE REVIEW

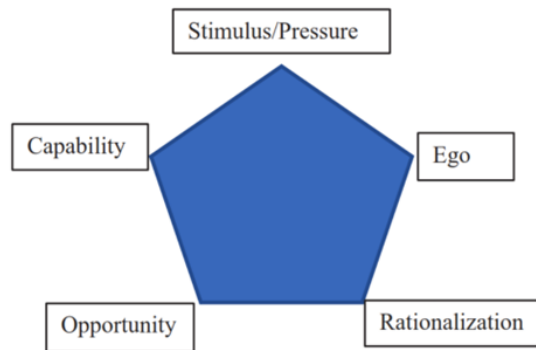
Asset misappropriation is a form of fraud involving the unlawful taking of cash, illegally possessing organizational assets, or embezzling goods for personal enrichment (Tuanakotta, 2010). This type of fraud often involves false or misleading records to conceal the theft (ACFE, 2016; 2018). Therefore, the definition of asset misappropriation is broader than simple theft as it also encompasses asset misappropriation through deceptive means. While asset misappropriation is generally committed by employees on a relatively small scale, it can also involve management personnel who often have greater ability to conceal violations in ways that are difficult to detect (Tuanakotta, 2010). In the public sector context, asset misappropriation becomes a serious concern as it involves the use of state funds and assets, potentially damaging public trust in government institutions (Tagora & Putriana, 2022).

In his article, Vousinas (2019) examined and introduced a model that builds upon the most established and widely recognized fraud models, the fraud triangle, fraud diamond, fraud scale, and the MICE framework (money, ideology, coercion, entitlement), to formulate a new model aimed at more effectively explaining the emergence of fraud and the key factors contributing to it. This study acknowledges ego as a key factor leading to fraudulent behavior. This insight led to the development of the S.C.O.R.E. model, which identifies the key elements influencing a person's decision to engage in fraud.

This model builds on the fraud triangle theory (FTT) and the fraud diamond theory (FDT) by identifying five key factors that drive individuals to commit fraud: stimulus, capability, opportunity, rationalization, and

ego. Stimulus refers to pressures that are often linked to the workplace such as strict deadline expectations or personal needs, like financial responsibilities to support their family. These factors can motivate individuals to take actions aimed at reducing the stress associated with these challenges (Cressey, 1950). Capability refers to the individual personal characteristics and skills that can influence fraud behavior (Saluja et al., 2022). Meanwhile, opportunity relates to weaknesses of internal controls, comprises of five components: control environment, risk assessment, control activities, information and communication, and monitoring, which together create a control environment (COSO, 2013). In addition, rationalization refers to an individual's justification of unethical behavior as acceptable or non-criminal (Abdullahi & Mansor, 2015). The last, Ego refers to the belief that social norms and rules do not apply to oneself, often accompanied by a lack of empathy for others (Watts, 2019).

Figure 1 The S.C.O.R.E. model



Source: Vousinas (2019)

Although the S.C.O.R.E. model encompasses a variety of internal and external drivers of fraud, it does not explicitly address ethical values, a dimension that may be particularly important in the public sector context. Ethical values themselves guide how individuals respond when they face situations where the right course of action is not always clear, including situations involving opportunities, pressures, and personal incentives that could lead to fraud (Said et al., 2017; Pradipta & Bernawati, 2019).

Several studies emphasize the role of weak ethical foundations in enabling or justifying someone to behave fraudulently. Sujeewa et al. (2018) and Koomson et al. (2020) found that the absence of ethical values often worsens the ever-increasing sophisticated method of fraud especially with the aid of technology. Koomson et al. (2020), in particular, incorporated ethical values as a control variable and explored their role within the S.C.O.R.E. framework in their study of public sector employees in Ghana. Their findings support the importance of integrating ethical values into fraud models to capture behavioral tendencies better.

In organizational settings, personal character alone does not fully determine one's ethical values. Leadership culture and accountability within the organization also play a role in shaping how employees behave. As a result, employees with stronger ethical values are less likely to engage in fraudulent actions (Awang & Ismail, 2018; Said et al., 2017, 2018).

Stimulus in the S.C.O.R.E. model refers to pressures that drive individuals to commit fraud, whether originating from the work environment or personal needs (Vousinas, 2019). Cressey (1950) in the fraud triangle theory identified pressure as one of the main pillars that causes a person to violate trust. This pressure can take the form of unrealistic performance targets, personal financial difficulties, or lifestyles beyond one's means (ACFE, 2022). Employees may face work targets that exceed their capabilities, creating pressure to commit fraud. Pressure can also arise from external parties such as an employee's family needs. Ruankaew (2016) and Said et al. (2017, 2018) found that employees generally commit fraud because they face pressure and fraud becomes a way to relieve it.

Previous studies on the effect of pressure on fraud have been extensive. Achmad et al. (2022), Awang & Ismail (2018), Kazemian et al. (2019), and Sari & Nugroho (2020) found that pressure has a positive effect on fraud. This indicates that the greater the pressure, the higher the drive for someone to engage in fraud. However, studies by Mardiah & Jasman (2021) and Utami et al. (2021) showed that pressure does not affect asset misappropriation. These mixed results suggest the need for further testing, particularly in the context of civil servants managing state assets in central institutions, who face different pressures and responsibilities compared to employees in other sectors. Based on the theoretical foundation and discussion above, the first hypothesis is proposed:

H₁: Stimulus is positively associated with perceived asset misappropriation.

Capability refers to the characteristics and abilities of individuals that enable them to commit fraud (Vousinas, 2019). Wolfe & Hermanson (2004) in the fraud diamond theory added capability as the fourth

element after pressure, opportunity, and rationalization because not everyone who has pressure and opportunity is able to commit fraud—certain capabilities are required. Individuals with high ability or position in an organization may have easier access to commit fraudulent acts. With their ability and position, they can access organizational resources that are otherwise restricted. A fraud perpetrator needs capability to commit fraud without being detected (Wolfe & Hermanson, 2004).

Research shows that fraud is often committed by those who have a deep understanding of system weaknesses, strategic positions, or technical skills that allow them to exploit gaps. Kazemian et al. (2019), Mardiah & Jasman (2021), Mohamed et al. (2021), and Nurani & Fuad (2022) found that capability has a positive effect on fraud. This indicates that the greater a person's capability, the higher the likelihood of involvement in fraud. However, studies by Achmad et al. (2022) and Sari & Nugroho (2020) showed that capability does not affect fraud.

In the context of state asset management, civil servants in central institutions generally have greater technical understanding and access compared to employees in regional areas. This may increase their capability to commit asset misappropriation if not balanced with adequate controls. Based on this argument, the second hypothesis is formulated as:

H₂: Capability is positively associated with perceived asset misappropriation.

Opportunity in the fraud framework refers to the chance to commit fraud without the risk of detection, which generally arises from weaknesses in internal control (Vousinas, 2019). COSO (2013) identifies five components of internal control that, if weak, can create opportunities for fraud: control environment, risk assessment, control activities, information and communication, and monitoring. Nawawi & Salin (2018) emphasized that weaknesses in internal control are the main cause of fraud opportunities in the workplace.

Research by Yusrianti et al. (2020) in their study of local government employees in Indonesia found that opportunity plays a significant role in influencing asset misappropriation. Kazemian et al. (2019) found similar results in the banking context. However, Mardiah & Jasman (2021) and Utami et al. (2021) found that opportunity does not always significantly affect asset misappropriation, depending on the context and the strength of existing control systems. In central government institutions, the complexity of asset management and the breadth of authority can create greater opportunities if internal controls are not properly designed. Therefore:

H₃: Opportunity is positively associated with perceived asset misappropriation.

Rationalization is the internal justification process that makes individuals feel that their fraudulent actions are reasonable or not criminal (Abdullahi & Mansor, 2015; Vousinas, 2019). In the fraud triangle, rationalization is a key element because it allows perpetrators to maintain a positive self-image despite engaging in unethical behavior. Most people who commit fraud rationalize their actions because they believe their actions are necessary and do not cause negative impacts (Ruankaew, 2016; Vousinas, 2019). An organizational culture already filled with fraudulent acts will worsen the effect of rationalization as employees see many others doing the same.

Research by Achmad et al. (2022), Mardiah & Jasman (2021), Mohamed et al. (2021), and Yusrianti et al. (2020) proved that rationalization has a positive effect on fraud. This indicates that the level of rationalization encourages involvement in fraudulent acts. However, a study by Sari & Nugroho (2020) showed that rationalization does not affect fraud. In the context of civil servants managing state assets, rationalization can appear in the form of justifications such as "everyone else is doing it" or "this is my right after years of service." This argument supports the hypothesis:

H₄: Rationalization is positively associated with perceived asset misappropriation.

Ego as the fifth factor in the S.C.O.R.E. model refers to the belief that social norms do not apply to oneself, often accompanied by a lack of empathy and a desire for recognition (Vousinas, 2019; Watts, 2019). Vousinas (2019) argues that ego drives individuals to build and maintain status or reputation, which can motivate fraud. Most people, especially those in high positions, will try to maintain their status due to ego demands, leading them to engage in fraudulent acts to fulfill that ego. Documentation of recent fraud cases shows that the most high-profile and large-scale frauds were driven by the perpetrator's ego (Vousinas, 2019).

Research by Koomson et al. (2020), Mohamed et al. (2021), Nurani & Fuad (2022), and Sari & Nugroho (2020) found that ego has a positive effect on fraud. This indicates that the level of ego encourages involvement in fraudulent acts. However, a study by Achmad et al. (2022) found that ego does not affect fraud. In the bureaucratic context, civil servants with high egos who hold strategic positions may be more vulnerable to fraud because they feel "above the rules." Based on this logic, we developed the following hypothesis:

H₅: Ego is positively associated with perceived asset misappropriation.

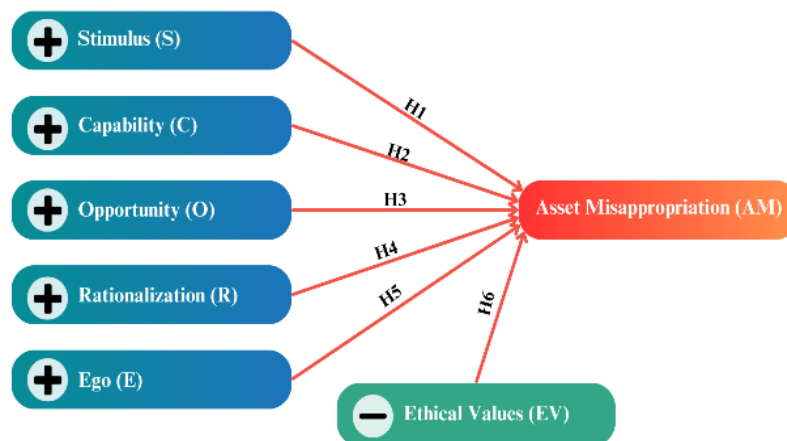
Unlike the previous five factors that encourage fraud, ethical values are positioned as an inhibiting factor. Ethical values guide individuals in responding to situations where the right course of action is not always clear, including when faced with opportunities and pressures that could lead to fraud (Said et al., 2017; Pradipta & Bernawati, 2019). Almost all organizations have a code of ethics that binds their employees. Previous research has found that people who commit fraud lack ethical values or do not comply with their organization's code of ethics (Awang & Ismail, 2018; Said et al., 2017, 2018).

Awang & Ismail (2018) and Said et al. (2017, 2018) found that employees with strong ethical values tend not to commit fraud. Sujeewa et al. (2018) emphasized the importance of integrating ethical values into fraud models because weak ethical foundations worsen the sophistication of fraud methods. Koomson et al. (2020) in their study in Ghana found that ethical values actually have a positive effect on asset misappropriation, while Hildayani & Sherly (2021), Mardiah & Jasman (2021), and Utami et al. (2021) found that ethical values do not affect asset misappropriation. Unlike Koomson et al. (2020) who placed ethics as a control variable, this study positions ethical values as a core component in the extended model. In the context of civil servants managing state assets, strong integrity and ethical values are believed to resist the temptation to abuse authority. Therefore:

H6: Ethical values are negatively associated with perceived asset misappropriation.

The theoretical framework of this study is shown in Figure 2.

Figure 2 Theoretical Framework



Source: Processed by the authors

METHODS

This research uses a survey method, collecting data from central government officials who work within the area of state asset management duties and functions using questionnaires as instrument. The instrument consists of 63 questions and is divided into two parts. The first part has five questions covering respondent demographics, and the second part contains 57 questions related to the indicators for each research variable. All indicator items are rated on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Given that fraudulent behavior is generally hidden and involves sensitive questions, this study adopts a perceptual approach. This questionnaire was designed to capture the perceptions of the research respondents. Therefore, respondent answers will reflect perceived influences, not the frequency of fraud acts. This kind of approach is widely used in fraudulent behavior research where direct observation is not practical to carry out. The following Table 1 summarizes the variables and their corresponding measurements.

The population for this research is all government employees working in ministries and central government institutions in Indonesia. The respondents chosen were employees who met specific sampling criteria that had been set, namely employees who have duties and functions and are responsible for asset management and are registered as users in the National Asset Management System application. Respondents represent various units across all ministries and central government institutions.

This research employs purposive sampling to select individuals with relevant qualifications. Then, to widen the reach of the instrument, a snowball sampling approach was also applied. This technique is quite useful in exploratory and descriptive research, especially when the population is hard to reach or when a high level of trust is needed to start contacts (Naderifar et al., 2017). Through this method, initial respondents were encouraged to recommend other individuals who meet the same criteria, including those from different units and geographic locations across Indonesia.

A preliminary trial was carried out before the full-scale data collection, with the aim of checking the quality and clarity of the questions used in the questionnaire. All the question items were adapted from validated research question that were originally developed in English. We did the translation carefully to keep the intended meaning. The preliminary trial was done by sending out the questionnaire to a small group of employees who met the sampling criteria and then analyzing the results. Besides that, we also did a content analysis to assess how accurate the measurement items were and how well respondents understood each question. The results from the preliminary trial confirmed that the questions used were clear and relevant, and they supported the suitability of the tool for later use in the main study.

Table 1 Description of Variables

Variable	Measurement	Reference
Stimulus (S)	9 questions; 7-Point Likert Scale	Koomson et al. (2020)
Capability (C)	6 questions; 7-Point Likert Scale	Koomson et al. (2020)
Opportunity (O)	10 questions; 7-Point Likert Scale	Koomson et al. (2020)
Rationalization (R)	9 questions; 7-Point Likert Scale	Koomson et al. (2020)
Ego (E)	8 questions; 7-Point Likert Scale	Koomson et al. (2020)
Ethical Values (EV)	7 questions; 7-Point Likert Scale	Said et al. (2017)
Asset Misappropriation (AM)	8 questions; 7-Point Likert Scale	Kazemian et al. (2019)

Source: Processed by the authors

We distributed the questionnaire electronically using Google Forms from December 2022 to June 2023. Out of the 1,457 questionnaires distributed, 674 were returned by the respondents. However, the analysis was performed on 625 valid questionnaires, representing approximately 93% of the total responses collected, or 42.9% of the total questionnaires distributed. This sample size exceeded the minimum requirement of 212 respondents, as recommended by Hair et al. (2022).

The analysis started with data cleaning process to check missing values and remove outliers. Removing outliers is essential, as they can distort statistical results and lead to erroneous conclusions (Hair et al., 2022). Next, PLS-SEM was employed to test the hypotheses, due to the model complexity with latent variables. This method has gained widespread acceptance across business and social science disciplines for its ability to assess intricate model relationships (Hair et al., 2024; Sarstedt et al., 2020).

The research model to test hypotheses is as follows.

$$AM_i = \beta_0 + \beta_1S + \beta_2C + \beta_3O + \beta_4R + \beta_5E + \beta_6EV + \epsilon_i \dots (1)$$

RESULT AND DISCUSSION

The following section presents the research findings based on the questionnaire data that was collected and discusses what they mean. This part starts by looking at the frequency statistics results, which describe the demographic makeup of the sample that filled out the questionnaire (Table 2). After that, there is a descriptive statistical analysis for each variable, including the average scores, standard deviations, and the minimum and maximum values (Table 3). The hypothesis testing in this research follows a two-step approach recommended by Hair et al. (2017). First, analysis of the measurement model to ensure the validity and reliability results for the constructs met the required standards. Second, analysis of the structural model, to test the hypotheses previously developed. Finally, each significant finding is then discussed in connection with earlier studies.

Table 2 Demographic Profile of Respondents

	Frequency	Percent
Sex		
Male	413	66.1%
Female	212	33.9%
Age		
Less than 26 years	43	6.9%
26 to 35 years	266	42.6%
36 to 50 years	282	45.1%
51 years and above	34	5.4%
Education Level		
High School	78	12.5%
Diploma I/III	127	20.3%
Undergraduate/Diploma IV	361	57.8%
Postgraduate	59	9.4%
Work Experience		
Less than 6 years	167	26.7%
6 to 10 years	118	18.9%

Table 2 Demographic Profile of Respondents (continued)

	Frequency	Percent
Work Experience		
11 to 15 years	160	25.6%
16 to 20 years	105	16.8%
21 years and above	75	12.0%
Location (Island)		
Sumatera	286	45.8%
Java	195	31.2%
Sulawesi	37	5.9%
Kalimantan	29	4.6%
Others	78	12.5%

Source: Processed by the authors

Some relevant demographic characteristics of employees involved in state asset management are shown in the demographic profile in Table 2. It can be seen that most respondents were male (66.1%). This reflects a gender imbalance in the workforce that can generally also be seen in other public sector positions and functions. Then, 45.1% of employees were aged between 36 and 50 years. 73.3% of respondents reported having more than 5 years of work experience, with 28.8% having worked for more than 15 years. This work tenure suggests that most respondents are experienced enough to provide useful perspectives on asset management practices. On the other hand, there were 26.7% of employees with less than five years of experience. This may indicate an ongoing generational transition happening within the workforce within this sector. The descriptive also indicates that majority of respondents have relatively high education. Around 57.8% have an undergraduate degree and there are even 9.4% with postgraduate qualifications. Geographically, most respondents are concentrated in Sumatera (45.8%) and Java (31.2%), highlighting the dominance of administrative and economic activities in these regions. This demographic makeup underlines the diversity and expertise of the respondents.

Table 3 Descriptive Statistics

Variables	N	Mean	SD	Min	Max
Stimulus (S)	625	4.18	1.01	1.00	7.00
Capability (C)	625	4.91	1.11	1.00	7.00
Opportunity (O)	625	2.20	0.97	1.00	7.00
Rationalization (R)	625	3.71	0.94	1.00	7.00
Ego (E)	625	2.75	0.77	1.00	5.00
Ethical Values (EV)	625	4.61	0.80	2.71	7.00
Asset Misappropriation (AM)	625	1.96	0.93	1.00	6.75

Source: Processed by the authors

Descriptive statistics are shown in Table 3. The average scores of all variables ranged from 1.96 to 4.91. From all the independent variables, Capability (M = 4.91, SD = 1.11) and Ethical Values (M = 4.61, SD = 0.80) showed relatively high average scores. This suggests that respondents generally see themselves as capable and ethical. In contrast, Opportunity (M = 2.20, SD = 0.97) and Ego (M = 2.75, SD = 0.77) showed lower averages. This reflects that respondent perceive fewer opportunities and lower tendencies related to ego. The average scores for the Stimulus and Rationalization variables were 4.18 and 3.71 respectively with standard deviations of 1.01 and 0.94. The dependent variable, Asset Misappropriation, recorded a low average score (M = 1.96, SD = 0.93). This indicate that respondents on average perceive a low tendency towards such behavior. The minimum and maximum values show the range of respondent answers for each research variable. The Stimulus, Capability, Opportunity, and Rationalization variables had a full range from 1.00 to 7.00, Ego ranged from 1.00 to 5.00, and Ethical Values ranged from 2.71 to 7.00. Meanwhile, Asset Misappropriation had a minimum value of 1.00 and a maximum of 6.75.

The measurement model was evaluated by assessing item reliability, internal consistency, and convergent validity. This step was essential to confirm that the indicators adequately represented the underlying constructs. A high loading factor value suggests that the indicator accurately represents the variable being measured. We evaluated outer loadings based on the thresholds suggested by Hair et al. (2022), where indicators between 0.60 and 0.70 can still be considered acceptable, while values above 0.70 represent satisfactory to good reliability. Accordingly, we retained indicators ≥ 0.67 after confirming that their inclusion contributed positively to internal consistency reliability (Hair et al., 2017).

As shown in Table 4, the refined measurement model indicated that the outer loadings for each indicator exceeded 0.60, the composite reliability values were above 0.70, and the average variance extracted (AVE) were greater than 0.50. Overall, these results are in line with the criterion as recommended by Hair et al. (2019, 2022). The full measurement model is illustrated in Figure 3.

The heterotrait-monotrait ratio of correlations (HTMT) was computed to evaluate the discriminant validity among the constructs. As shown in Table 5, all HTMT values were below 0.85, confirming the presence of discriminant validity (Henseler et al., 2015). Thus, the results summarized in Table 5 confirm the established discriminant validity.

Table 4 Reliability, Internal Consistency, and Convergent Validity Result

	Items	Outer Loading	CR	AVE
Stimulus (S)	S1	0.72	0.83	0.55
	S2	0.76		
	S3	0.69		
	S4	0.79		
Capability (C)	C1	0.67	0.87	0.64
	C2	0.89		
	C3	0.88		
	C4	0.73		
Opportunity (O)	O1	0.76	0.93	0.67
	O2	0.85		
	O3	0.84		
	O4	0.85		
	O5	0.79		
	O6	0.79		
	O7	0.83		
Rationalization (R)	R1	0.84	0.91	0.77
	R2	0.90		
	R3	0.88		
Ego (E)	E1	0.68	0.85	0.54
	E2	0.76		
	E3	0.70		
	E4	0.78		
	E5	0.75		
Ethical Values (EV)	EV1	0.73	0.85	0.65
	EV2	0.86		
	EV3	0.82		
Asset Misappropriation (AM)	AM1	0.71	0.90	0.58
	AM2	0.71		
	AM3	0.67		
	AM4	0.80		
	AM5	0.75		
	AM6	0.82		
	AM7	0.84		

Source: Processed by the authors

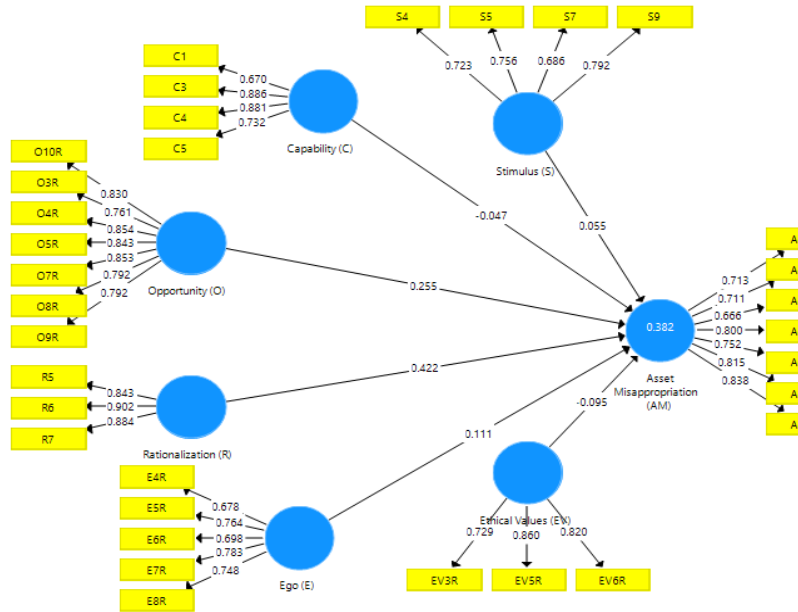
Table 5 Discriminant Validity (Heterotrait-Monotrait ratio)

	AM	C	E	EV	O	R	S
AM							
C	0.073						
E	0.298	0.154					
EV	0.209	0.213	0.075				
O	0.420	0.287	0.354	0.132			
R	0.604	0.135	0.199	0.308	0.235		
S	0.296	0.113	0.090	0.194	0.154	0.413	

Source: Processed by the authors

The use of questionnaires as research instruments carries the potential risk of common method bias (CMB). CMB arises because the data collected is subjective and obtained from relatively similar participants and sources (Podsakoff et al., 2012). The study employed the complete collinearity assessment approach using variance inflation factor (VIF) suggested by Kock (2015). As shown in Table 6, all VIF values were below 3.3, suggesting that our model is free from CMB problem. To account for potential differences in results among groups with varying demographic characteristics, we conducted a multi-group analysis. The findings (untabulated) indicated no significant differences between the groups, with the results remaining consistent across all demographics.

Figure 3 Measurement Model



Source: Processed by the authors

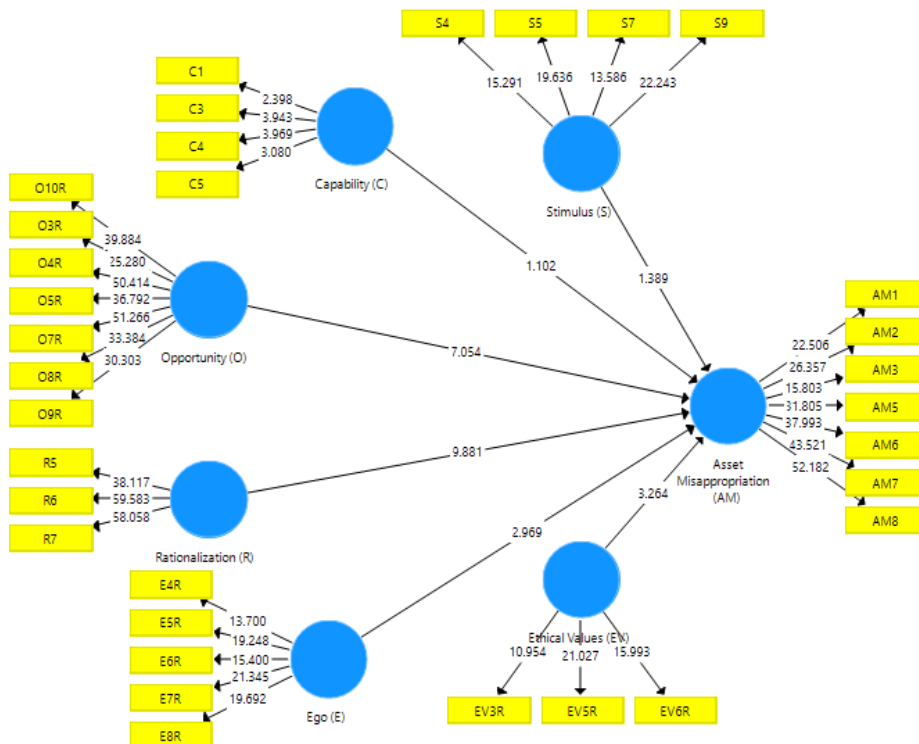
Table 6 Variance Inflation Factor

Factor	VIF
Stimulus (S)	1.143
Capability (C)	1.109
Opportunity (O)	1.235
Rationalization (R)	1.271
Ego (E)	1.124
Ethical Values (EV)	1.114

Source: Processed by the authors

The hypotheses were evaluated using structural model analysis via PLS-SEM with the bootstrapping method (Hair et al., 2019), as shown in Figure 4. Table 7 provides details on the relationships between each construct. Each variable is discussed in the sections that follow.

Figure 4 Structural Model



Source: Processed by the authors

The path coefficient of stimulus on asset misappropriation was not significant ($\beta=0.055$, $p\geq 0.05$), indicating no support for H1. For the second hypothesis, the path coefficient showed that capability had no significant effect on asset misappropriation ($\beta=-0.047$, $p\geq 0.05$), leading to the rejection of H2. The path coefficient of opportunity on asset misappropriation was positive and significant ($\beta=0.255$, $p<0.05$), indicating support for H3. Rationalization also showed a positive and significant effect on asset misappropriation ($\beta=0.422$, $p<0.05$), confirming H4. Ego showed a positive and significant impact on asset misappropriation ($\beta=0.111$, $p<0.05$), supporting H5. Finally, ethical values showed a negative and significant effect on asset misappropriation ($\beta=-0.095$, $p<0.05$), leading to the acceptance of H6.

Table 7 Coefficients and p-values for Hypotheses

H	Path	Coefficient	p-value	Result
H1	S → AM	0.055	0.266	Rejected
H2	C → AM	-0.047	0.161	Rejected
H3	O → AM	0.255	0.000	Accepted
H4	R → AM	0.422	0.000	Accepted
H5	E → AM	0.111	0.003	Accepted
H6	EV → AM	-0.095	0.001	Accepted

Source: Processed by the authors

One interesting finding is that stimulus did not significantly affect asset misappropriation in the context of central government organizations in Indonesia. Stimulus commonly conceptualized as pressure is frequently identified as a motivating factor that drives individuals to commit fraudulent acts within fraud theories such as the fraud pentagon and other related models as discussed in Koomson et al. (2020). However, the findings of this research indicate that this may not hold true in the context of central government. This suggests that subjective pressure may be perceived as less influential in environments where institutional controls or norms override individual stressors.

Certain factors may influence why pressure does not affect asset misappropriation in government institutions. Government employees often have a responsibility to serve the public and work for the common good. Despite their potentially low or inadequate salaries, this pressure is not a reason for them to engage in fraudulent actions that could harm both the community and the institutions in which they work (Mardiah & Jasman, 2021). The results aligned with Hildayani & Sherly (2021), Said et al. (2017), and Utami et al. (2021). However, they contradict the findings of Kazemian et al. (2019), Koomson et al. (2020), and Sari & Nugroho (2020).

Although the results failed to document a significant association between capability and asset misappropriation, this finding can provide valuable insights for human resource management and anti-fraud practitioners in designing better fraud prevention strategies. The results suggest that capability, as perceived by respondents, may not be a salient factor influencing asset misappropriation in the context studied. Therefore, organizations may pay more attention to other factors that have a more significant impact on asset misappropriation, such as rationalization, ethical values, perception of internal control strength, and ego level. One possible explanation is that perceived capability is homogenous among respondents, given shared access to formal training and bureaucratic procedures. These research findings are consistent with the results reported by Putra et al. (2024), Ramadlan et al. (2020), Ratmono & Frendy (2022), and Sinaga & Rohman (2025). Their research was conducted in diverse organizational contexts such as regional development banks (BPD), government institutions, private companies, and micro, small, and medium enterprises (MSMEs). Across these studies capability consistently failed to emerge as a significant predictor of perceived asset misappropriation and any directional trend that appeared tended to be negative.

A strong positive connection between opportunity and asset misappropriation suggests that the higher tendency of civil servants to engage in dishonest activities will be emerged, when they perceive a weak internal control system. This finding supports previous studies that that strong internal controls in an organization are one of the most effective ways to cut down fraud in the workplace (Ghani et al., (2021); Le & Tran, 2018; Said et al., 2018). This finding points to a need to improve how workers see and understand the internal controls in central institutions in Indonesia, which could make employees feel that the gains from committing fraud are not worth the risk of getting caught by these controls.

A strong positive link between rationalization and asset misappropriation shows that individuals see their bad behavior as necessary and justifiable. Common rationalizations that drive asset misappropriation at work are seen as making up for wages that are lower compared to what workers contribute, which convinces employees that their actions are not wrong and do not hurt anyone. This finding backs up the fraud pentagon theory and earlier studies showing that rationalization plays a big role in asset misappropriation (Achmad et al., 2022; Hildayani & Sherly, 2021; Kazemian et al., 2019; Koomson et al., 2020; Mardiah & Jasman, 2021; Mohamed et al., 2021; Nurani & Fuad, 2022; Owusu et al., 2022; Purnamasari & Oktaroza, 2015; Ruankaew, 2016; Said et al., 2017, 2018; Vousinas, 2019; Yusrianti et al., 2020). In this study, rationalization came out as the strongest factor pushing individuals to perceive themselves as likely to commit asset misappropriation.

This suggests that organizations need to develop programs that address how employees justify fraudulent acts, for example by building a strong corporate culture, since a well-implemented corporate culture has been empirically shown to weaken employee rationalizations for committing fraud (Setiawan & Soewarno, 2025).

Another finding from this study showed that ego contributes significantly to asset misappropriation. Individuals with a strong sense of self-importance and a high need to keep up a good self-image might be more at risk of dishonest behavior. Ego is the newest element introduced in the S.C.O.R.E. model. In that model, it is mentioned that ego is one reason why someone gets involved in fraudulent activities, including asset misappropriation. The results of this study support the validity of this developing fraud theory, which is now commonly known as the S.C.O.R.E. model. Other studies also found that ego act as a motivating factor in fraudulent activities (Koomson et al., 2020; Kranacher & Riley, 2019; Vousinas, 2019). However, further research is needed to deepen understanding of the role of ego on fraud behavior and to develop more targeted prevention strategies that specifically deal with this factor because it is still a new concept in fraud theory.

Another finding from this study showed negative association between ethical values and asset misappropriation. This finding is consistent with earlier research that strong ethical values motivate employees to comply with organizational policies and avoid fraud (Awang & Ismail, 2018; Said et al., 2017, 2018), while in contrast with Koomson et al. (2020), who found a positive relationship. It should be noted that Koomson et al. (2020) themselves said this result was unexpected and called for more research to better understand the conditions where ethical values actually predict behavior.

These findings certainly underscore the importance of strengthening ethical values among civil servants as part of a strategy to reduce asset misappropriation in central government institutions. Organizations could think about strengthening their codes of conduct and encouraging workers to take in ethical principles in their daily work, because strong ethical values have been shown to lower the chance of fraud happening (Said et al., 2017). By pointing out the factors that shape asset misappropriation in Indonesian central government institutions, this study offers insights that could be used as a reference for future fraud prevention efforts.

CONCLUSION

This study enriched the fraud literature, particularly occupational fraud manifested in asset misappropriation, among central government workers who have responsibilities and tasks related to managing state assets. The research aimed to identify what drives such behavior and provide insights that could help shape prevention strategies for relevant stakeholders. The results showed that while stimulus and capability were not strongly associated with asset misappropriation, other factors (opportunity, rationalization, and ego) each had a clear positive effect. Among these factors, rationalization came out as the most dominant one. The study also confirmed that ethical values are negatively associated with asset misappropriation.

From practical perspectives, these findings underscore the urge of organizations to prevent main drivers of asset misappropriation found in this study. Specifically, the dominance of rationalization suggests that organizations should set up programs aimed at reducing the tendency of workers to justify dishonest acts, for instance by building a strong company culture. Strengthening internal control systems is also recommended, as solid internal controls can lower how much opportunity employees perceive for committing fraud. The clear negative effect of ethical values further suggests that management should think about strengthening the code of conduct and getting workers to adopt ethical principles as part of a full-scale anti-fraud strategy.

This study has several limitations. First, the respondents are limited to central institutions and working in asset management. This might affect response variation and exclude perspective from other roles. These particular respondents' characteristics and the relatively small number may also limit the generalizability of the findings, and may not fully represent the wider population of civil servants in Indonesia.

Using just a questionnaire to collect data can bring a risk of bias. Because the fraud topic is sensitive, respondents might not report their perceptions accurately since they tend to give socially desirable answers instead of what they really perceive.

Using a seven-point Likert scale also means the findings show how respondents see the variables rather than what they actually do, and people might understand the scale differently which can cause some inconsistency. So, other methods like interviews or observations could give deeper insights.

Also, this study did not systematically check if responses varied across different demographic groups like age, education level, or work experience. That kind of analysis could have shown, for instance, how perceptions of capability differ between demographic segments. On top of that, the research design did not fully capture demographic data, such as job level or income, which could have made the analysis of variables like stimulus, opportunity, rationalization, and ego richer.

A clearer understanding of what drives asset misappropriation can help in developing better policies and prevention measures, which can in the end strengthen internal controls and lower fraud risk. These findings also show the value of expanding research in this area through different methods and wider groups of respondents, which could give a more complete picture of fraud dynamics. Policymakers and practitioners are encouraged to use these insights when they design fraud detection and prevention strategies. Future research should keep exploring additional variables and adopt different data collection methods, including qualitative,

mixed method, and longitudinal approaches, to build a more complete anti-fraud framework and provide deeper insights to better understand the dynamics determinants of fraudulent behavior.

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