



FRAUD PREVENTION IN GOVERNMENT PROCUREMENT THROUGH INTERNAL CONTROLS AND WHISTLEBLOWING SYSTEMS

Muhammad Cahyadi,¹ Siprianus Palete,² Maria Wahyuningsih³

^{1,2,3} Program Studi S1 Akuntansi, Fakultas Ekonomi dan Ilmu-Ilmu Sosial, Universitas Fajar, Indonesia

Corresponding author: muhammadcahyadi@unifa.ac.id

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ABSTRACT

Research Objectives - This study aims to analyze the effects of e-procurement implementation, internal control systems, and whistleblowing systems on the prevention of fraud in government procurement of goods and services.

Method - This study employed a quantitative approach using a survey method involving employees engaged in procurement activities at the Public Works and Spatial Planning Office of North Penajam Paser Regency. Data were analyzed using multiple linear regression with the assistance of IBM SPSS Statistics 31 after the research instruments had undergone validity and reliability testing.

Research Findings - The results indicate that e-procurement implementation does not have a significant effect on fraud prevention. This finding suggests that procurement digitalization alone is insufficient to effectively prevent fraud without adequate organizational oversight and compliance mechanisms. In contrast, internal control systems and whistleblowing systems have a positive and significant effect on fraud prevention, as they reduce opportunities for fraudulent behavior and increase the likelihood of detecting irregularities.

Theory and Practical Implications - These findings reinforce the Fraud Triangle Theory, which emphasizes that reducing opportunities is a critical factor in preventing fraud. Therefore, government institutions should strengthen internal control systems and optimize whistleblowing mechanisms as key strategies for mitigating fraud risks in public procurement.

Novelty - This study reveals that e-procurement does not independently influence fraud prevention; however, it contributes significantly when integrated with internal control systems and whistleblowing systems.

INTRODUCTION

Government procurement of goods and services is one of the sectors most vulnerable to fraud due to the large amount of public funds involved and the participation of multiple stakeholders in the decision-making process. In recent years, issues of transparency and accountability in procurement have received increasing attention alongside growing demands for the implementation of good governance and digital transformation in the public sector. The Association of Certified Fraud Examiners (ACFE, 2024) reported that corruption and abuse of authority remain the most prevalent forms of fraud within government institutions. To address these challenges, governments have developed various control mechanisms, including e-procurement, internal control systems, and whistleblowing systems, to minimize opportunities for fraud in procurement processes. Previous studies have shown that procurement digitalization through e-procurement enhances transparency and accountability while reducing the risk of irregularities in government procurement activities (Neupane et al., 2014; Hasanah, 2023). Furthermore, stronger internal control systems and the implementation of whistleblowing systems have been found to contribute significantly to fraud prevention efforts in public sector organizations (Destiyana et al., 2024).

However, previous studies examining the determinants of fraud prevention in government procurement have produced inconsistent findings. Faradila and Sofyan (2024) found that e-procurement and internal control systems significantly influence fraud prevention, whereas



whistleblowing systems do not have a significant effect. In contrast, Hasanah (2023) and Suryani (2025) concluded that all three variables individually exert a positive influence on fraud prevention. Meanwhile, Desiliani and Ramadhan (2025) reported that internal control systems do not significantly affect fraud prevention in procurement activities. These inconsistencies indicate the existence of a research gap regarding the effectiveness of e-procurement, internal control systems, and whistleblowing systems in preventing fraud within government procurement.

From a theoretical perspective, this study is grounded in the Fraud Triangle Theory developed by Cressey (1953). The theory explains that fraud occurs due to the presence of three elements: pressure, opportunity, and rationalization. In the context of government procurement, e-procurement and internal control systems serve to reduce opportunities for fraud through enhanced transparency, electronic documentation, and more effective monitoring mechanisms. Meanwhile, whistleblowing systems help reduce rationalization by increasing the likelihood of detecting and reporting violations. Nevertheless, recent studies suggest that the effectiveness of these mechanisms depends not only on their existence but also on the quality of implementation, organizational culture, leadership commitment, and the compliance level of public officials (Asmu'i, 2025; Nuansari et al., 2025). Therefore, further empirical investigation is necessary to provide stronger evidence regarding the relationship between these variables and fraud prevention.

The novelty of this study lies in the simultaneous examination of the effects of e-procurement implementation, internal control systems, and whistleblowing systems on fraud prevention in government procurement activities at the Public Works and Spatial Planning Office of North Penajam Paser Regency. Unlike previous studies, which primarily focused on local governments in general, ministries, or other public sector organizations, this research concentrates on an institution characterized by a high intensity of procurement activities, making it particularly relevant for assessing the effectiveness of fraud prevention mechanisms. In addition, this study integrates the three control mechanisms into a single empirical model based on the Fraud Triangle Theory perspective.

This study aims to analyze the effects of e-procurement implementation, internal control systems, and whistleblowing systems on fraud prevention in government procurement, both partially and simultaneously. The findings are expected to contribute to the development of the public sector fraud literature and provide practical recommendations for local governments in strengthening procurement governance. Nevertheless, this study has limitations because it was conducted within a single local government agency, namely the Public Works and Spatial Planning Office of North Penajam Paser Regency, with respondents limited to employees directly involved in procurement activities. Consequently, the findings cannot be generalized to all government institutions and require further validation in different organizational contexts.

METHOD

This study employed a quantitative approach using a survey method to examine the effects of e-procurement implementation, internal control systems, and whistleblowing systems on the prevention of fraud in government procurement of goods and services. A quantitative approach was selected because it enables the objective measurement of relationships among variables through numerical data analyzed using inferential statistical techniques (Creswell & Creswell, 2018). Similar approaches have been widely applied in public sector fraud studies. Hasanah (2023), Faradila and Sofyan (2024), and Suryani (2025) found that the implementation of electronic procurement systems, internal controls, and whistleblowing mechanisms contributes to enhanced fraud prevention. At the international level, Neupane et al. (2014) demonstrated that e-procurement improves transparency and reduces opportunities for corruption in public procurement, while Gottschalk (2018) emphasized that whistleblowing systems serve as essential instruments for detecting and preventing organizational fraud. Therefore, the quantitative approach was considered appropriate for generating empirical evidence regarding the causal relationships among the variables under investigation.

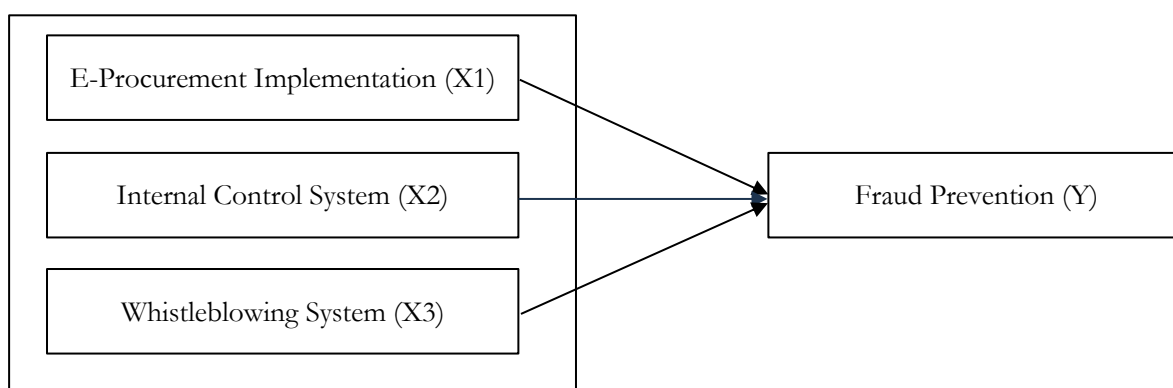
Data were collected through the distribution of questionnaires to employees involved in procurement activities at the Public Works and Spatial Planning Office of North Penajam Paser Regency. The respondents consisted of Budget Users (PA), Budget User Authorities (KPA),

Commitment-Making Officials (PPK), Procurement Officials (PP), Technical Activity Implementation Officials (PPTK), Expenditure Treasurers (BP), and Assistant Expenditure Treasurers (BPP). A purposive sampling technique was employed, resulting in a sample of 50 respondents selected based on their direct involvement in government procurement processes. The research instrument utilized a four-point Likert scale to measure respondents' perceptions of e-procurement implementation, internal control systems, whistleblowing systems, and fraud prevention. The use of questionnaires was considered effective for obtaining standardized and efficient primary data while facilitating the quantitative measurement of research constructs (Sekaran & Bougie, 2020). Furthermore, questionnaires have become the dominant data collection method in public sector accounting and governance research because they generate reliable data that can be readily analyzed using statistical techniques.

Data analysis was performed using IBM SPSS Statistics version 31. The analytical procedure began with descriptive statistical analysis to describe respondent characteristics and the distribution of research data. Subsequently, data quality tests were conducted, including validity testing using the Pearson Product-Moment Correlation and reliability testing using Cronbach's Alpha, with a minimum threshold of 0.70 indicating acceptable instrument reliability (Ghozali, 2018). After the instruments were confirmed to be valid and reliable, multiple linear regression analysis was employed to examine the effects of e-procurement implementation (X_1), internal control systems (X_2), and whistleblowing systems (X_3) on fraud prevention in government procurement (Y). Hypothesis testing was conducted using t-tests to assess the partial effects of each independent variable, F-tests to examine their simultaneous effects, and the coefficient of determination (R^2) to evaluate the model's ability to explain variations in the dependent variable.

Conceptually, the relationships among the research variables are illustrated in Figure 1.

Figure 1 Conceptual framework



The conceptual framework is grounded in the Fraud Triangle Theory developed by Cressey (1953), which posits that fraud can be prevented by reducing opportunities and rationalization through the implementation of electronic procurement systems, effective internal controls, and adequate whistleblowing mechanisms. Accordingly, the research model was developed to examine the extent to which these three independent variables contribute to enhancing the effectiveness of fraud prevention in government procurement of goods and services.

RESULTS AND DISCUSSION

Effect of E-Procurement Implementation on Fraud Prevention. The results of the multiple linear regression analysis indicate that the e-procurement implementation variable has a significance value of 0.769 (> 0.05), suggesting that it does not have a significant effect on fraud prevention in government procurement of goods and services. This finding indicates that the hypothesis proposing a significant effect of e-procurement implementation on fraud prevention cannot be supported. Descriptively, the e-procurement implementation variable obtained a mean score of 33.92, indicating that the electronic procurement system at the Public Works and Spatial Planning Office of North Penajam Paser Regency has been implemented relatively well. However, the implementation of the electronic system has not significantly contributed to reducing the

potential for fraud. This finding suggests that the presence of information technology does not automatically lead to effective control unless it is supported by high-quality implementation, user integrity, and adequate monitoring mechanisms. This result is consistent with the argument of Vaidya et al. (2006), who stated that the success of e-procurement depends not only on technological availability but also on organizational factors, human resources, and management commitment.

From the perspective of the Fraud Triangle Theory (Cressey, 1953), e-procurement is expected to reduce opportunities for fraud through enhanced transparency, electronic documentation, and improved audit trails. However, the findings reveal that reducing fraud opportunities cannot be achieved solely through the digitalization of procurement processes. This condition suggests that irregularities may still occur at certain stages that cannot be fully controlled by electronic systems. The findings of this study are inconsistent with those of Hasanah (2023), Suryani (2025), Faradila and Sofyan (2024), and Asmu'i (2025), who reported that e-procurement implementation significantly influences fraud prevention. These differences indicate that the effectiveness of e-procurement is highly dependent on organizational context, user compliance, and the quality of procurement governance within each institution.

Effect of Internal Control Systems on Fraud Prevention. The hypothesis testing results indicate that internal control systems have a positive and significant effect on fraud prevention, with a significance value of less than 0.001. This finding suggests that the more effective the internal control system implemented by an organization, the greater its ability to prevent fraud in government procurement activities. The result confirms that internal control systems serve as a primary instrument for creating an accountable organizational environment free from fraudulent practices. The existence of clear procedures, segregation of duties, transaction authorization, and continuous monitoring activities has proven effective in reducing opportunities for fraud.

According to the Fraud Triangle Theory, internal control functions to reduce opportunity, which is one of the primary causes of fraud (Cressey, 1953). Effective control systems limit individuals' ability to engage in manipulation, abuse of authority, and other corrupt practices. At the Public Works and Spatial Planning Office of North Penajam Paser Regency, internal control systems have been implemented through standard operating procedures, segregation of duties, document verification mechanisms, and periodic supervision. The findings are consistent with those of Hasanah (2023), Suryani (2025), Faradila and Sofyan (2024), and Destiyana et al. (2024), who concluded that internal control systems significantly influence fraud prevention. These findings are also supported by the international study conducted by Amiram et al. (2018), which demonstrated that the quality of internal controls is positively associated with an organization's ability to reduce fraud risk and enhance accountability in resource management.

Effect of Whistleblowing Systems on Fraud Prevention. The analysis results indicate that the whistleblowing system has a positive and significant effect on fraud prevention, with a significance value of 0.003 (< 0.05). This finding suggests that the existence of a violation-reporting mechanism supports fraud prevention efforts in government procurement activities. Descriptively, the whistleblowing system variable obtained a mean score of 32.88, indicating that respondents perceived the reporting mechanism to be available and reasonably well understood by employees. This condition suggests that employees have access to reporting channels when they identify indications of misconduct within the organization.

According to the Fraud Triangle Theory, a whistleblowing system contributes to reducing both opportunity and rationalization by increasing the likelihood that fraudulent actions will be detected. Individuals intending to commit fraud face greater risks because their actions may be reported by others. Furthermore, the existence of a whistleblowing system contributes to fostering a culture of integrity and transparency within the organization. The findings are consistent with those of Hasanah (2023), Suryani (2025), Destiyana et al. (2024), Nuansari et al. (2025), Firdausi and Kurniawan (2025), and Musthofa et al. (2025), all of whom reported that whistleblowing systems significantly influence fraud prevention. The findings are also in line with the international study by Brown et al. (2016), which concluded that effective whistleblowing mechanisms enhance the early detection of fraud and strengthen organizational governance. Nevertheless, the effectiveness of whistleblowing systems

remains influenced by factors such as organizational culture, employee trust, and the level of protection provided to whistleblowers.

Effect of E-Procurement Implementation, Internal Control Systems, and Whistleblowing Systems on Fraud Prevention. The results of the simultaneous test indicate that e-procurement implementation, internal control systems, and whistleblowing systems collectively have a significant effect on fraud prevention, with a significance value of less than 0.001 and an Adjusted R Square value of 0.667. These results indicate that 66.7% of the variation in fraud prevention can be explained by the three independent variables included in the research model, while the remaining 33.3% is influenced by other factors not incorporated into the model. This finding demonstrates that fraud prevention is a multidimensional phenomenon that cannot be explained by a single control mechanism alone.

From the perspective of the Fraud Triangle Theory, the combination of e-procurement, internal control systems, and whistleblowing systems can simultaneously address various factors contributing to fraud. E-procurement and internal controls function to reduce opportunity by enhancing transparency and monitoring, while whistleblowing systems help reduce rationalization by increasing the risk of fraud disclosure. The findings indicate that although e-procurement does not have a significant partial effect, it still contributes to the overall control environment when combined with internal control systems and whistleblowing systems. These findings are consistent with Hasanah (2023), who argued that the integration of multiple control instruments enhances the effectiveness of fraud prevention. Furthermore, international studies by Neu et al. (2013) and the OECD (2023) emphasize that public sector fraud prevention efforts are more effective when implemented through an integrated approach combining process digitalization, strengthened internal controls, and independent and trustworthy whistleblowing mechanisms.

CONCLUSION

The research findings indicate that the implementation of e-procurement does not have a significant effect on the prevention of fraud in government procurement of goods and services. In contrast, the internal control system and whistleblowing system were found to have a positive and significant effect on fraud prevention. These findings suggest that the success of fraud prevention is not solely determined by the use of technology in procurement processes but is more strongly influenced by the effectiveness of control and monitoring mechanisms implemented within the organization. Furthermore, the simultaneous test results reveal that e-procurement implementation, internal control systems, and whistleblowing systems collectively have a significant effect on fraud prevention. Therefore, the higher the quality of internal controls and the effectiveness of whistleblowing mechanisms, the greater the organization's ability to minimize opportunities for fraud in government procurement activities. These findings support the Fraud Triangle Theory, which posits that fraud can be prevented by reducing opportunities and increasing the likelihood of fraud detection and disclosure.

Compared with previous studies, the findings of this research demonstrate notable differences, particularly regarding the e-procurement variable. Earlier studies conducted by Hasanah (2023), Faradila and Sofyan (2024), and Suryani (2025) reported that e-procurement significantly influenced fraud prevention, whereas the present study found no significant partial effect. Conversely, the findings concerning the positive influence of internal control systems and whistleblowing systems are consistent with prior studies emphasizing the importance of these mechanisms in preventing fraud within the public sector. The novelty of this study lies in its empirical evidence that the digitalization of procurement through e-procurement is not necessarily effective unless supported by a robust internal control system and a well-functioning whistleblowing system. Therefore, efforts to prevent fraud in government procurement should adopt an integrated approach that combines technology, internal controls, and sustainable whistleblowing mechanisms.

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