Kontigensi: Jurnal Ilmu Manajemen
Vol 13, No. 1, June 2025, pp. 62-83
ISSN 2088-4877

The Influence of E-Procurement Implementation, Internal Control Systems, and Whistleblowing Systems on Preventing Procurement Fraud in Government Goods and Services (Empirical Study on the Ministry of Marine Affairs and Fisheries).

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DOI: https://doi.org/10.56457/jimk.v13i1.751

Received: February 26, 2025	Accepted: June 03, 2025	Published: June 06, 2025

ABSTRACT

The increase in corruption cases in Indonesia from year to year has come under the spotlight of various parties where the majority of cases come from the government sector, especially in goods/services procurement. This study aims to analyze the factors that influence the accountability of government performance in fraud prevention. Research data is primary data obtained through questionnaires and analyzed with Partial Least Square (PLS) using the smartPLS program. Research population is procurement actors who are directly involved in the procurement process of goods and services in all work units of the Ministry of Maritime Affairs and Fisheries. Research samples are 100 samples using a purposive sampling method. The results showed that the implementation of e-procurement has a positive effect on preventing fraud in the procurement of government goods and services, and the internal control system has a significant positive effect on preventing fraud in the procurement of government goods and services, and the whistleblowing system has a positive effect on preventing fraud in the procurement of government goods and services. This research is expected to serve as a valuable source of information and a foundation for policy-making, ensuring a more effective procurement process for goods and services within the Ministry of Maritime Affairs and Fisheries.

Keywords: E-Procurement Implementation, Internal Control Systems, Whistleblowing Systems

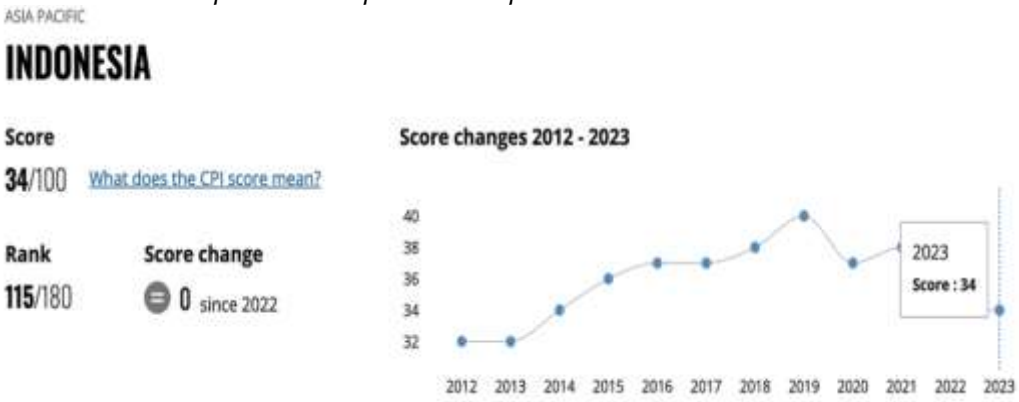
INTRODUCTION

Procurement of goods and services in the government sector is a vital agenda to support government activities in building facilities and infrastructure needed by the community. Procurement of goods and services in practice is regulated in Presidential Regulation No. 16 of 2018 which was updated by Presidential Regulation No. 12 of 2021. This regulation contains procedures and governance for the procurement of goods and services properly and correctly. However, in fact, even though there are regulations that are used as a basis for regulating the procurement process of goods and services, there are still many cases of corruption, collusion and nepotism that cause fraud in the procurement of goods and services. This fraud can be

carried out by the perpetrators of procurement of goods and services in a government agency so that it has an effect on state losses.

One of the annual publications issued by Transparency International is the results of the Corruption Perception Index (CPI) survey which noted that corruption in Indonesia in 2023 reached a score of 34 on a scale of 0-100. Although Indonesia's CPI score was stagnant, Indonesia's ranking dropped five places to 115th position globally in 2023.

Graph 1. Corruption Perception Index 2021-2023



Data Source: Transparency International Ann..... C.....n, 2023

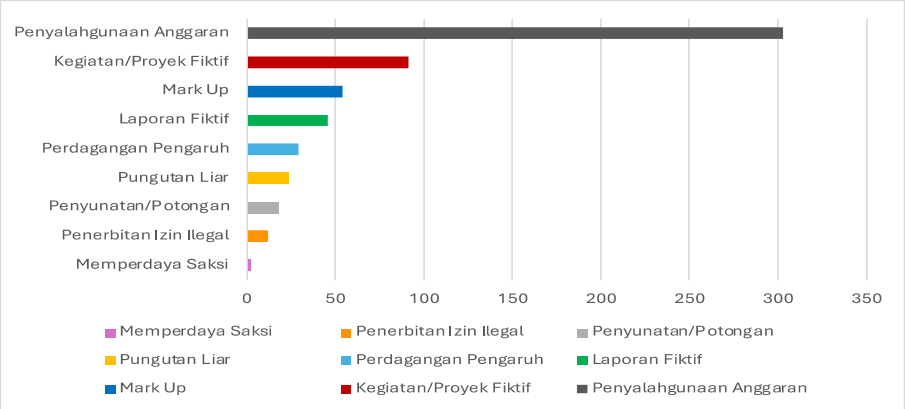
The KPK has recorded that it has handled 705 corruption cases during the period 2019 to 2023. And procurement of goods/services is the second most common corruption case after gratification/bribery. Corruption cases in the procurement of goods/services that have been handled by the KPK throughout the period 2019 to 2023 reached 151 cases. It can be seen that corruption cases in the procurement of goods and services are the most cases where the subject of the violation is carried out by government officials.

Table 1. Corruption Crimes Based on Types of Cases Handled by the Corruption Eradication Committee Period 2019-2023

Type of Case	2019	2020	2021	2022	2023	Amount
Procurement of Goods/Services	18	27	30	14	62	**151**
Licensing	-	-	2	-	3	**5**
Gratification/Bribery	119	55	65	100	85	**504**
Levy/Extortion	1	-	-	1	1	**3**
Misuse of Budget	2	6	3	-	-	**11**
TPPU	5	3	7	5	8	**28**
Obstructing the Investigation Process	-	-	1	-	2	**3**
AMOUNT	**145**	**91**	**108**	**120**	**161**	**705**

Data Source: Corruption Eradication Commission 2023

Graph 1.Corruption Case Mapping Based on Mode in 2022



Data Source: Indonesia Corruption Watch, 2021

This mapping was conducted to see the tendencies of the suspects when carrying out their actions, ICW identified as many as 9 modes used by the suspects to commit corruption. The most widely used mode of corruption by the suspects in 2020 was budget misuse. Other modes that are often used are mark ups and fictitious activities/projects. These three modes are often found in corruption cases of procurement of goods/services and government budget management. Of the 579 cases that were successfully uncovered, 250 cases or 43% of them were in the dimension of Procurement of Goods and Services.

Graph 1. Potential State Financial Losses in 2018-2022

Data Source: Indonesia Corruption Watch, 2022

Based on the ICW report, in 2022 the total potential state financial loss due to corruption reached IDR 42,747 trillion. This will greatly affect the direction of national development and violate the social and economic rights of the community. State financial management needs to be encouraged to be more transparent, professional, and responsible.

*Fraud*In the procurement of goods and services, whether carried out by the public sector or the private sector, this often occurs due to the abuse of authority held by procurement officials and other related officials or can also occur due to the lack of competence of these officials in relation to the procurement process for goods and services.

This is also proven by the rampant practice of corruption in the procurement of goods and services carried out in government circles. For example, there have been several cases of fraud in the government sphere related to the Procurement of Goods and Services over the past few years, one of the cases occurred in the Ministry of Marine Affairs and Fisheries itself and the Supreme Court has sentenced the former Minister of Marine Affairs and Fisheries as a defendant because he was proven to have accepted bribes from businessmen related to the export of lobster seeds (BBL) or benur, the Supreme Court decided the verdict on the former Minister of Social Affairs in 2021 as a defendant in corruption in the procurement of social assistance at the Ministry of Social Affairs in handling the Covid-19 pandemic, in addition in 2017, the Supreme Court decided the verdict on the former Minister of Health as a defendant in a case of abuse of authority in the procurement of medical devices (alkes) to anticipate extraordinary events (KLB), and in 2014, the Supreme Court decided the verdict on the former Minister of Youth and Sports (Menpora) as a defendant in directing the budgeting and procurement of goods and services for the continued development of the National Sports Education, Training and School Center (P3SON) located in Hambalang Village.

The large number of corruption cases in Indonesia in the government sector in the procurement of goods and services indicates non-compliance and inconsistency in the implementation of laws and regulations, weak internal control systems, and conflicts of interest in related ministries and/or institutions. This can open up opportunities for perpetrators to commit fraud. Wulandari & Nuryanto (2018) explain that fraud prevention strategies are a series of programs designed to control the factors driving fraud by creating conditions that make it easier to detect fraud and encourage fraud prevention efforts, one of which is by implementing effective internal control. Fraud can be detected and prevented early with good internal control. The more effective the internal control implemented, the more likely fraud can be minimized.

In line with these findings, Azizah & Erinos (2022) found that the internal control system has a positive and significant effect on fraud prevention. Continuous supervision and evaluation of operational activities in an institution can prevent fraud.

The procurement system of goods and services (e-procurement) is one form of internal control that can be applied to an organization. e-procurement is a website that is an auction system in the procurement of goods and services by the government using internet-based technology, information and communication facilities. With e-procurement, the auction process can take place effectively, efficiently, competitively, transparently, fairly or non-discriminatory and accountably, so that it is expected to reflect openness/transparency and also minimize fraudulent practices or KKN in the auction of procurement of goods that result in losses to state finances (Sutedi, 2012b).

With the implementation of the e-procurement system and internal control, it can prevent the occurrence of corruption, collusion and nepotism in

the procurement of goods and services, because the implementation of the e-procurement system and good internal control can control government activities. This aims to prevent fraud by reducing the direct face-to-face system between the goods provider and the goods procurement committee, because the direct face-to-face system causes collusion between the goods provider and the goods and services procurement committee (Romaissah, Imtikhanah & Hidayah, 2019).

Internal control system must be part of the overall management of the organization. The achievement of the organization in deciding a management policy needs to be supported by internal control. In general, the definition of internal control is a process in an organization in checking the accuracy, precision, and effectiveness and efficiency of a business process to achieve certain goals.

The function of implementing internal control according to Romney (2014:227) is:

1. Preventive Control: Internal control measures before problems arise. For example, regulations are created that govern the running of an organization.
2. Detective Controls: Controls that are performed to detect problems that have already occurred. For example, periodic and ongoing audits.
3. Corrective Control: Internal control to identify and correct problems and recover from errors.

On the page*wbs.lkpp.go.id*The Government Goods/Services Procurement Policy Institute (LKPP) defines a whistleblowing system as a mechanism for submitting complaints about alleged certain criminal acts that have occurred or will occur involving employees and other people that are carried out in the organization where they work, where the reporter is not part of the perpetrators of the crime reported and LKPP keeps the identity of the whistleblower confidential and protects.

The complaint criteria include the following:

- *what*, what actions are known to indicate criminal acts of corruption/violations;
- *when*, when was the criminal act of corruption/violation committed;
- *who*, who is responsible/involved and related to the criminal act of corruption/violation;
- *where*, where the criminal act of corruption/violation occurred;
- *how*, how the criminal act of corruption/violation was carried out (mode, method, etc.); and
- *evidence,*equipped with supporting initial evidence (data, documents, images and recordings).

1.2 Research Gap

Many studies have been conducted previously on the implementation of goods and services procurement systems (e-procurement), internal control systems, and whistleblowing systems as efforts to prevent fraud.

From the presentation of the results of previous research, it indicates that there is a research gap in the research and can be explained as follows:

Research related to the implementation of e-procurement was conducted by Akbar, Rosidi, & Andayani (2019) and Primastiwi, Wardani, & Hanisah (2020).

Previous research by Akbar, Rosidi, & Andayani (2019) on the Influence of e-Procurement Implementation and Government Internal Control System on Fraud Prevention in Procurement of Goods/Services with Organizational Ethical Culture as a Moderator. The results of the study explain that the implementation of e-Procurement and the Government Internal Control System (SPIP) have a role in overcoming various frauds in the procurement process. Meanwhile, the ethical culture of the organization has been proven to be able to strengthen the existing system in efforts to prevent fraud in the procurement of goods and services.

Primastiwi, Wardani, & Hanisah (2020) conducted a study aimed at finding out the Influence of the Implementation of e-procurement and the Government's Internal Control System on the Prevention of Fraud in the Procurement of Goods and Services in the Public Sector. The results of the study showed that the influence of the implementation of e-procurement had a positive and significant effect on the prevention of fraud in the procurement of goods and services and the influence of the implementation of the government's internal control system had a positive and significant effect on the prevention of fraud in the procurement of goods and services.

The results of the study conducted by Hadianto (2022) regarding the implementation of e-procurement contradict the research by Akbar, Rosidi, & Andayani (2019) and Primastiwi, Wardani, & Hanisah (2020), in Hadianto's (2022) research on the Impact of Using e-Procurement, Accountability, Competence and Compensation on the Performance of Government Procurement of Goods/Services, where the study produced the hypothesis that the Impact of Using E-procurement, Accountability and Compensation has a negative effect on the performance of procurement of goods/services while Compensation has a positive effect on the performance of procurement of goods/services. Due to the research gap between the research conducted by Hadianto (2022) and Akbar, Rosidi, & Andayani (2019) and Primastiwi, Wardani, & Hanisah (2020), it is necessary to conduct a follow-up on the effect of e-Procurement implementation on government procurement of goods and services.

Research related to internal control systems was conducted by Romaissah, Imtikhanah, & Hidayah (2019) and Leatamia & Febryanti (2020).

Romaissah, Imtikhanah, & Hidayah (2019) conducted a study by testing the Influence of the Implementation of the e-Procurement System and Internal Control on the Prevention of Fraud in Government Procurement of Goods/Services. The results of the study showed that internal control variables had a significant effect on the prevention of fraud in the procurement of goods/services.

Leatamia & Febryanti (2020) conducted a test on the Influence of Internal Control and Organizational Commitment on the Prevention of Procurement Fraud (Empirical Study at Government Hospitals in Ambon City). The results of the study showed that internal control had a significant

positive effect on the prevention of procurement fraud at the Ambon City Government Hospital.

In this study, the researcher attempted to develop previous research, including research by Romaissah, Imtikhanah, & Hidayah (2019) who conducted research by testing the effect of implementing an e-procurement system and internal control on preventing fraud in government procurement of goods and services, where in its development, a potential variable was added, namely the Whistleblowing System. The researcher considers it important to add this variable because the Whistleblowing System in efforts to prevent fraud is one of the important things in achieving the goals and objectives of the organization.

However, the results of the internal control system research conducted by Krisna Dewi & Sari Dewi (2021) revealed something different by showing that the committee's income had a negative effect on the tendency of fraud in the procurement of goods/services, the procurement system and procedures had a positive effect on the tendency of fraud in the procurement of goods/services, the internal control system had a negative effect on the tendency of fraud in the procurement of goods/services, the quality of the procurement committee had a positive effect on the tendency of fraud in the procurement of goods/services, and procurement ethics had a negative effect on the tendency of fraud in the procurement of goods/services. Due to the research gap between the research conducted by Krisna Dewi & Sari Dewi (2021) and Romaissah, Imtikhanah, & Hidayah (2019) and Leatamia & Febryanti (2020), it is considered necessary to conduct further research on the influence of the internal control system.

Furthermore, research related to the Whistleblowing System was conducted by Anandya & Werastuti (2020) and Wahyuni & Nova (2018).

Anandya & Werastuti (2020) have conducted a study on the Influence of Whistleblowing System, Organizational Culture and Individual Morality on Fraud Prevention at PT. Pelabuhan Indonesia III (Persero) Benoa Bali with the results of the study stating that the whistleblowing system has a positive and significant influence on fraud prevention, organizational culture has a positive and significant influence on fraud prevention, and individual morality has a positive and significant influence on fraud prevention.

Wahyuni & Nova (2018) conducted a study by testing the Analysis of the Whistleblowing System and Apparatus Competence on Fraud Prevention (Empirical Study on the Regional Government Organizational Unit of Bengkalis Regency) the test results stated that the whistleblowing system had an effect on fraud prevention in the Regional Government Organizational Unit of Bengkalis Regency. The existence of an organizational commitment to the whistleblower protection policy, a clear and responsible reporting mechanism and the implementation of evaluation and improvements to increase the effectiveness of the whistleblowing system were able to prevent fraud.

The results of a study conducted by Wardah, Carolina, & Wulandari (2022) showed that there was no relationship between the variables of the whistleblowing system and

organizational culture on fraud prevention. This is due to the whistleblowing system being inadequate to protect reporters regarding fraud prevention measures. In addition, a culture of mutual trust, as well as good ethics and integrity, has not yet been formed. On the other hand, the variables of internal control and leadership have a positive influence on fraud prevention. The existence of a research gap between the research of Anandya & Werastuti (2020) and by Wahyuni & Nova (2018) with Wardah, Carolina, & Wulandari (2022) requires further research on the influence of the whistleblowing system.

In addition to this, this study uses 3 (three) types of basic theories to develop a research model related to fraud prevention in government procurement of goods and services, namely agency theory, fraud triangle theory, and public governance theory.

The data in this study were obtained from respondents' answers to the questionnaire distributed by the researcher to Procurement Actors who were directly involved in the procurement process of goods and services in all work units of the Ministry of Maritime Affairs and Fisheries.

Based on the background described above, the author is interested in conducting research with the title "THE INFLUENCE OF E-PROCUREMENT IMPLEMENTATION, INTERNAL CONTROL SYSTEM, AND WHISTLEBLOWING SYSTEM ON FRAUD PREVENTION IN GOVERNMENT PROCUREMENT OF GOODS AND SERVICES (Empirical Study at the Ministry of Maritime Affairs and Fisheries)".

METHOD

This study is a causality study that aims to explain the causal relationship between independent and dependent variables. The independent variables in this study are the Implementation of e-Procurement, Internal Control System, and Whistleblowing System, whileThe dependent variable is the Prevention of Fraud in Government Procurement of Goods and Services at the Ministry of Maritime Affairs and Fisheries. These variables are measured using dimensions and indicators that have been adopted from previous studies, with adjustments to the context of the object and subject of this study.

The dependent variable, Prevention of Government Procurement Fraud, is measured by several dimensions, including strengthening the legal framework and transparent procedures, quality of procurement implementation, opening of tender documents and evaluation of bids, and delegation of authority and inspection. The indicators used to measure this variable include compliance with procurement implementation guidelines, transparency in the announcement of goods/services to be purchased, and inspection by auditors of procurement carried out by the government.

Meanwhile, for the first independent variable, e-Procurement Implementation, is measured based on dimensions such as preparation of tender planning and announcement, submission of bids, and announcement of tender winners. This study uses Presidential Regulation No. 16 of 2018 which was updated with Presidential Regulation No. 12 of 2021 and the LPSE website to measure the implementation

of e-Procurement. The dimensions used to measure the implementation of e-Procurement include job announcements on the SPSE website that can be accessed by the public, sending bid documents online with encryption, and making and signing contracts through an SPSE account.

The second independent variable, Internal Control System, is defined as a process carried out by management and all employees to ensure that organizational goals are achieved effectively, efficiently, and in accordance with regulations. This system is measured by the dimensions of the control environment and risk assessment, as well as information, communication, and monitoring. These dimensions are measured by indicators such as a clear structure in the organization and risk management for the achievement of goals, as well as effective communication of relevant information.

The third independent variable, Whistleblowing System, is defined as a system that allows individuals to report violations or fraud in an organization. The dimensions measured in this study include structural and operational aspects, as well as maintenance aspects. The indicators used include commitment to report violations, the existence of special media for submitting reports, and protection of whistleblowers by guaranteeing their confidentiality.

This study uses an interval scale to measure all variables, where respondents are asked to rate how much they agree with the statements. The population in this study consisted of 300 procurement actors at the Ministry of Marine Affairs and Fisheries, with a sample determined using the Slovin formula, resulting in 100 randomly selected respondents. Data were collected through the distribution of online questionnaires to procurement actors.

Data analysis was conducted using multiple linear regression techniques to determine the effect of each independent variable on the dependent variable. Smart PLS software was used for data processing, including descriptive statistical tests, classical assumption tests, and hypothesis tests to test the relationship between the variables studied. Classical assumption tests include normality tests, multicollinearity test, and heteroscedasticity test, which aim to ensure that the data meets the necessary assumptions before further regression analysis is carried out.

RESULTS and DISCUSSION

Descriptive statistics are used for data analysis referring to the answers of respondents who are used as research samples for each variable measurement indicator. Below is a descriptive statistics table:

Table 2. Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Implementation of e-Procurment	100	3.00	5.00	4.438	.3848

Internal Control System	100	3.00	5.00	4.394	.3683
Whistleblowing System	100	3.00	5.00	4,380	.4003
Prevention of Fraud in Government Procurement of Goods and Services	100	3.40	5.00	4.462	.3549
Valid N (listwise)	100				

Source: Results of data processing using SEM PLS

Based on table 4.8 above, it can be concluded that descriptive statistics with a sample size of 100 respondents state that the e-Procurement Implementation variable has a lower limit (minimum value) of 3.00 to an upper limit (maximum value) of 5.00. The average value of e-Procurement Implementation from 100 respondents shows a mean of 4,438, the positive results interpret that in general the Ministry of Maritime Affairs and Fisheries has implemented e-Procurement Implementation well. The standard deviation value shows a deviation of 0.3848 (below average) meaning that e-procurement implementation has a low level of data variation and reflects consistency or uniformity in the data, so almost all values do not show significant differences from each other.

The Internal Control System variable has a lower limit (minimum value) of 3.00 to an upper limit (maximum value) of 5.00. The average value of the Internal Control System from 100 respondents shows a mean of 4,394, the positive result interprets that in general the Ministry of Maritime Affairs and Fisheries has implemented the Internal Control System well. The standard deviation value shows a deviation of 0.3683 (below average) meaning that the Internal Control System has a low level of data variation and reflects consistency or uniformity in the data, so almost all values do not show significant differences from each other.

The Whistleblowing System variable has a lower limit (minimum value) of 3.40 to an upper limit (maximum value) of 5.00. The average value of the Whistleblowing System from 100 respondents shows a mean of 4,380, the positive results interpret that in general the Ministry of Maritime Affairs and Fisheries has implemented the Whistleblowing System well. The standard deviation value shows a deviation of 0.4003 (below average) meaning that the implementation of the Whistleblowing System has a low level of data variation and reflects consistency or uniformity in the data, so almost all values do not show significant differences from each other.

The variable of Fraud Prevention in Government Procurement of Goods and Services has a lower limit (minimum value) of 3.00 to an upper limit (maximum value) of 5.00. The average value of Fraud Prevention in

Government Procurement of Goods and Services from 100 respondents shows a mean of 4,462, the positive result interprets that in general the Ministry of Maritime Affairs and Fisheries has implemented Fraud Prevention in Government Procurement of Goods and Services well. The standard deviation value shows a deviation of 0.3549 (below the average) meaning that the implementation of Fraud Prevention in Government Procurement of Goods and Services has a low level of data variation and reflects consistency or uniformity in the data, so almost all values do not show significant differences from each other.

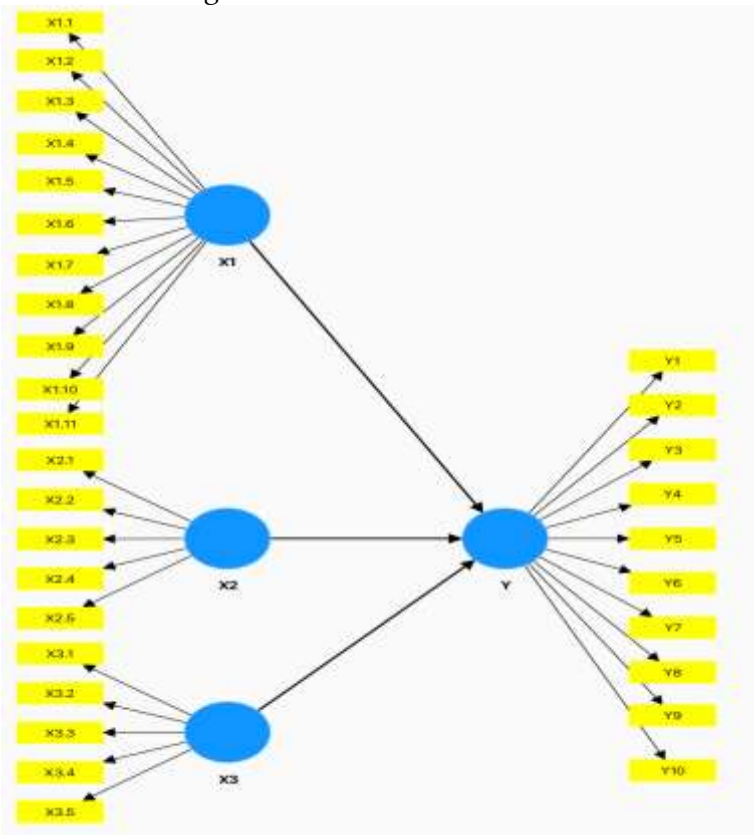
4.3 Statistical Test

In this study, the author uses analysis using data tabulation assisted by the Smart PLS 4 Program. Robert D. Retherford (1993) in Basuki & Puswoto (2015:137) explains that path analysis is a technique for analyzing causal relationships that occur in multiple regression if the independent variables affect the dependent variables not only directly but also indirectly, so that researchers analyze the influence of e-procurement implementation, internal control systems, and whistleblowing systems on preventing fraud in government procurement of goods and services at the Ministry of Maritime Affairs and Fisheries.

4.3.1 Research Model

The first model to analyze in general is related to the influence of e-procurement implementation (X1), internal control system (X2) and whistleblowing system (X3) on preventing fraud in procurement of goods and services at the Ministry of Maritime Affairs and Fisheries (Y).

Figure 4. Research Model



Source: Results of data processing using SEM PLS

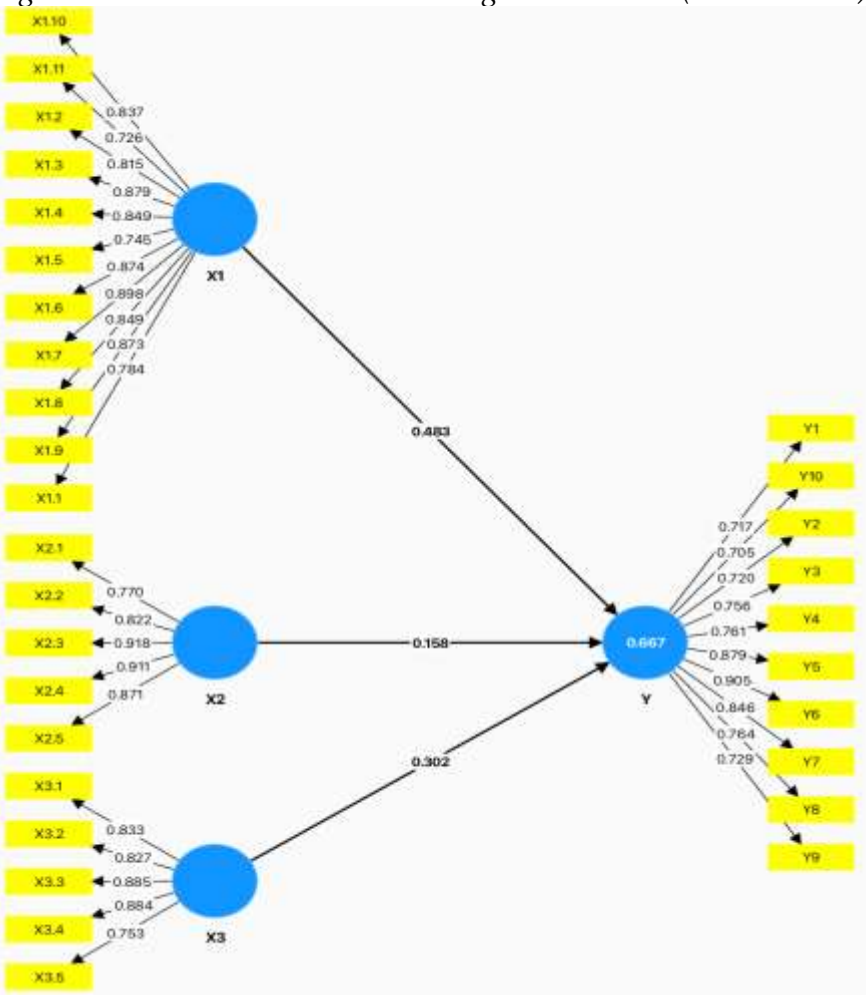
Measurement Model Assessment (Outer Model)

The measurement model (outer model) is a measurement model that connects indicators with latent research variables. In this study, 3 criteria were used in the assessment of the outer model and used a tool in the form of Smart-PLS software version 4.1.0.8. The 3 criteria in question are convergent validity, discriminant validity, and composite reliability.

1) Convergent Validity

*Convergent validity*is one of the 3 criteria in data analysis using Smart-PLS software version 4.1.0.8. Convergent validity in a measurement model can be observed based on the correlation between the indicator score and the construct/variable score (Ghozali and Latan, 2015). An indicator is considered reliable if the correlation value is > 0.7, but a correlation value of 0.5 to 0.6 in early-stage research on developing a measurement scale or research in a field that has not been widely developed is still acceptable or still considered adequate (Ghozali and Latan, 2015). Based on the opinion put forward by Ghozali and Latan (2015), this study uses a loading factor limit of 0.5. Therefore, indicators are categorized as reliable if they have a correlation value > 0.5. Below are the results of the convergent validity test based on the measurement model that has been designed:

Figure 4. Measurement Model Loading Factor Value (Outer Model)



Source: Results of data processing using SEM PLS

Based on figure 4.2 above, it can be observed that the loading factor of each indicator all has a correlation value > 0.5. The results in figure 4.2 can be seen more clearly in the Outer Loadings (Measurement Model) table below:

Table 4. Outer Loading Test

	X1	X2	X3	Y	KET
X1.1	0.784				Valid
X1.2	0.815				Valid
X1.3	0.879				Valid
X1.4	0.849				Valid
X1.5	0.745				Valid
X1.6	0.874				Valid
X1.7	0.898				Valid
X1.8	0.849				Valid
X1.9	0.873				Valid
X1.10	0.837				Valid
X1.11	0.726				Valid
X2.1		0.770			Valid
X2.2		0.822			Valid
X2.3		0.918			Valid
X2.4		0.911			Valid
X2.5		0.871			Valid
X3.1			0.833		Valid
X3.2			0.827		Valid
X3.3			0.885		Valid
X3.4			0.884		Valid
X3.5			0.753		Valid
Y1				0.717	Valid
Y2				0.720	Valid
Y3				0.756	Valid
Y4				0.761	Valid
Y5				0.879	Valid
Y6				0.905	Valid
Y7				0.846	Valid
Y8				0.764	Valid
Y9				0.729	Valid
Y10				0.705	Valid

Source: Results of data processing using SEM PLS

Variable item X1.1 has an Outer Loading value of 0.784, which means that this item is valid for measuring variable X1. Every change in variable X1 will be reflected in variable X1.1 by 61.46% (0.784 X 0.784 = 0.6146). Variable X2.1 has an Outer Loading value of 0.770, which means that this item is valid for measuring variable X2. Every change in variable X2 will be reflected in variable X2.1 by 59.29% (0.770 X 0.770 = 0.5929). Variable X3.1

has an Outer Loading value of 0.857, which means that this item is valid for measuring variable X3. Every change in variable X3 will be reflected in variable X3.1 by 69.38% (0.833 X 0.833 = 0.6938). Variable Y1.1 has an Outer Loading value of 0.717, which means that this item is valid for measuring variable Y1.1. Every change in variable Y1 will be reflected in variable Y1.1 by 51.40% (0.717 X 0.717 = 0.5140).

From the Outer Loadings Test results table, it shows that all item variables have an Outer Loading value above 0.7. So it can be concluded that all item variables are valid for research.

Table 5. Convergent Validity Test

	Cronbach's alpha	***Composite reliability (rho_a)***	***Composite reliability (rho_c)***	***Average variance extracted (AVE)***
X1	0.955	0.957	0.961	0.692
X2	0.911	0.916	0.934	0.740
X3	0.893	0.903	0.921	0.702
Y	0.928	0.934	0.940	0.610

Source: Results of data processing using SEM PLS

According to (Sarstedt et al, 2017) the Average Variance Extracted (AVE) value of 0.5 or more indicates that the construct can explain 50% or more of the variation of its items. From the table, the AVE values of variables X1, X2, X3, and Y have values above 0.5 which indicate adequate convergent validity and mean that one latent variable is able to explain more than half of the variation of its indicators on average.

Table 6. Cross loading discriminant validity test

	X1	**X2**	**X3**	**Y**
X1.1	**0.784**	0.326	0.501	0.640
X1.2	**0.815**	0.378	0.564	0.575
X1.3	**0.879**	0.372	0.553	0.661
X1.4	**0.849**	0.371	0.629	0.672
X1.5	**0.745**	0.342	0.491	0.583
X1.6	**0.874**	0.330	0.645	0.644
X1.7	**0.898**	0.340	0.588	0.629
X1.8	**0.849**	0.356	0.528	0.633
X1.9	**0.873**	0.396	0.619	0.720
X1.10	**0.837**	0.387	0.545	0.599
X1.11	**0.726**	0.537	0.548	0.565
X2.1	0.450	**0.770**	0.401	0.435
X2.2	0.392	**0.822**	0.382	0.404
X2.3	0.384	**0.918**	0.454	0.480
X2.4	0.349	**0.911**	0.483	0.468
X3.1	0.370	**0.871**	0.527	0.502
X3.2	0.487	0.572	**0.833**	0.568
X3.3	0.491	0.419	**0.827**	0.475
X3.4	0.611	0.380	**0.885**	0.572
X3.5	0.654	0.452	**0.884**	0.711

X3.6	0.571	0.380	**0.753**	0.614
Y1	0.466	0.379	0.563	**0.717**
Y2	0.410	0.403	0.541	**0.720**
Y3	0.511	0.395	0.599	**0.756**
Y4	0.522	0.383	0.502	**0.761**
Y5	0.697	0.400	0.597	**0.879**
Y6	0.720	0.473	0.598	**0.905**
Y7	0.756	0.426	0.612	**0.846**
Y8	0.598	0.485	0.537	**0.764**
Y9	0.563	0.411	0.501	**0.729**
Y10	0.593	0.420	0.524	**0.705**

Source: Results of data processing using SEM PLS

According to (Ghozali and Latan, 2015) a good cross loading value is above 0.7. The Cross Loading value of each construct is tested to ensure that the correlation of the construct with the measurement item is greater than other constructs. Based on the table, the Cross Loading value of each variable item has a value above 0.7. For example, the variable item X1.1 has a Cross Loading value of 0.784 and above 0.7. The Cross Loading value of X1.1 has a higher correlation with variables X2 (0.326), X3 (0.501) and Y (0.640). So it can be concluded that the discriminant validity requirements have been met.

Table 7. Fornell Larcker

	X1	**X2**	**X3**	**Y**
X1	**0.83**			
X2	0.45	**0.86**		
X3	0.68	0.53	**0.84**	
Y	0.76	0.54	0.71	**0.78**

Source: Results of data processing using SEM PLS

According to (Wong, 2013) a variable can be said to have good discriminant validity if the AVE root value of each construct is greater than the correlation value between constructs and other constructs. From the table, the AVE root value is the value in the diagonal axis (in bold). From the table, it shows that the AVE root value is greater than the correlation value of other variables. For example, in variable X1 which has an AVE root value of 0.832, which is greater than the AVE root value of variables X2 (0.450), X3 (0.680) and Y (0.760)

Table 8. Heterotrait Monotrait (HTMT)

	X1	**X2**	**X3**
X1			
X2	**0.49**		
X3	0.73	**0.58**	
Y	0.8	0.58	**0.77**

Source: Results of data processing using SEM PLS

According to (Henseler et al, 2015) the HTMT value must be below 0.9 to ensure discriminant validity between two reflective constructs. The table

shows that all HTMT values of each variable are below 0.9, indicating that all constructs have been valid in terms of discriminant validity based on the HTMT calculation.

Table 9. Inner VIF

	Y
X1	1,904
X2	1,414
X3	2,099
Y	

Source: Results of data processing using SEM PLS

According to Santoso (2011), if the VIF value is above 5, then the variable has a multicollinearity problem with other independent variables. Based on the table, the VIF value for each item variable X1, X2 and X3 has a VIF value below 5, meaning there is no multicollinearity between variables.

2) *Reliability Test*

Table 10. Convergent Validity Test

	Cronbach's alpha	***Composite reliability (rho_a)***	***Composite reliability (rho_c)***	***Average variance extracted (AVE)***
X1	0.955	0.957	0.961	0.692
X2	0.911	0.916	0.934	0.740
X3	0.893	0.903	0.921	0.702
Y	0.928	0.934	0.940	0.610

Source: Results of data processing using SEM PLS

According to (Ghozali and Latan, 2015) a good Cronbach's Alpha value is above 0.7. From the table, the Cronbach's Alpha value of variables X1, X2, X3 and Y have a Cronbach's Alpha value above 0.7 which indicates that all of these constructs are reliable.

According to (Sarstedt et al, 2017) a good Composite Reliability value is above 0.7. From the table, the Composite Reliability values of variables X1, X2, X3 and Y have values above 0.7 which indicates that all constructs are reliable.

A) Inner Model

1) R Square & Q Square Test

*Table 11.*Coefficient of Determination (R-Square and Adjusted R-Square)

	R-square	**R-square adjusted**
Y	0. 667	0. 656

Source: Results of data processing using SEM PLS

According to (Sarstedt et al, 2017) the R Square values of 0.75, 0.50, and 0.25 indicate that the model is strong, moderate and weak.

Based on the table, the R Square value for variables X1, X2 and X3 against Y is 66.70%. This shows that the distribution of variable Y can be explained by variables X1, X2 and X3 by 66.70%. The remaining 33.30% is explained by other variables not examined in this study.

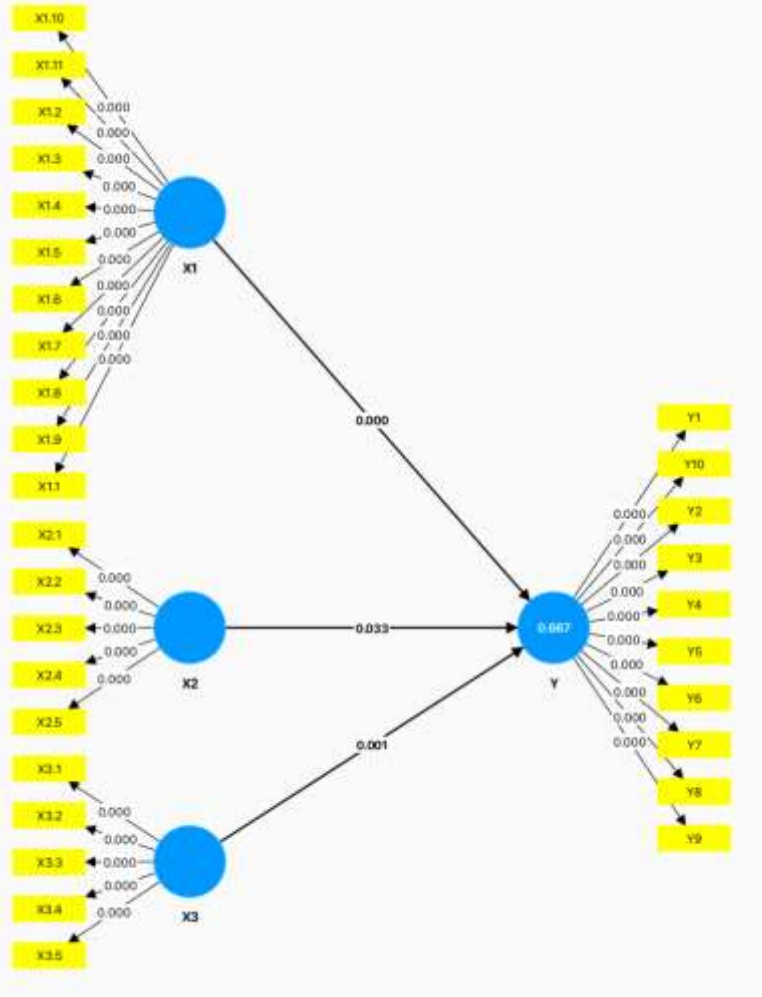
The calculation of Prediction Relevance (Q-Square) based on the determination coefficient value (R-Square) is presented below:

Q2 = 1 - (1 - R12)
Q2 = 1 - (1 - 0.667)
Q2 = 1 - (0.667)
Q2 = 0.667

The result of the Q-Square calculation in this study was 0.667 or 66.70%, which means that the greater the Q value and closer to 1, the better. Thus, it can be concluded that the model in this study has a relevant predictive value, where the model used can explain the information in the research data by 66.70%.

2) Hypothesis Testing

Figure 4. Structural Model Loading Factor Value (Inner Model)



Source: Results of data processing using SEM PLS

Table 12. Hypothesis Test (t-Test)

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
X1 -> Y	0.483	0.484	0.086	5,591	**0.000**
X2 -> Y	0.158	0.163	0.074	2.134	**0.033**
X3 -> Y	0.302	0.301	0.088	3.431	**0.001**

Source: Results of data processing using SEM PLS

Y = 0.483X1 + 0.158X2 + 0.302X3 + e

According to Ghozali (2016), if the p value is below 0.05 then Ha is accepted. Conversely, if the p value is above 0.05 then Ha is rejected.

a) X1 has a partial effect on Y

From the table, it can be concluded that X1 has a positive influence on Y of 0.483 (positive) which shows that the direction of the relationship between X1 and Y is positive with a t statistic of 5.591 (above 1.96) and a p value of 0.000 (below 0.05).

b) X2 has a partial effect on Y

From the table, it can be concluded that X2 has a positive influence on Y of 0.158 (positive) which shows that the direction of the relationship between X2 and Y is positive with a t statistic of 2.134 (above 1.96) and a p value of 0.033 (below 0.05).

c) X3 has a partial effect on Y

From the table, it can be concluded that X3 has a positive influence on Y of 0.302 (positive) which shows that the direction of the relationship between X3 and Y is positive with a t statistic of 3.431 (above 1.96) and a p value of 0.001 (below 0.05).

3) Goodness of Fit model evaluation

Table 7. Effect Size Test Results (F-Square)

	Y
X1	0.368
X2	0.053
X3	0.130
Y	

Source: Results of data processing using SEM PLS

According to (Sarstedt et al, 2017) the f square value of 0.02 means small, 0.15 means moderate and 0.35 means large. Based on the table, the influence of X1 on Y has a moderate level of 0.368. The influence of X2 on Y has a moderate level of 0.053. The influence of X3 on Y has a large level of 0.130.

Table 13. Fit Model

	Saturated model	Estimated model
SRMR	0.080	0.080
d_ULS	3.204	3.204
d_G	2,764	2,764
Chi-square	1235.793	1235.793
NFI	0.654	0.654

Source: Results of data processing using SEM PLS

According to (Schermelleh et al, 2003) explains that the SRMR value is still acceptable if it has a value below 0.10. Based on the table, the SRMR value is 0.080 which indicates that the model fits.

DISCUSSION

Implementation of e-Procurement to Prevent Fraud in Government Procurement of Goods and Services

From the results of the t-test, it was found that the implementation of e-procurement had a positive effect on preventing fraud in government procurement of goods and services.

As also stated by Mu'ah et al. (2024) in his journal entitled The Effect of E-Procurement Implementation on Fraud in Procurement of Goods and Services in Realizing Good Governance states that e-Procurement is a system for procuring goods or services using electronic media such as the internet or computer networks. e-Procurement is applied in the online purchasing and sales process to make it more efficient and effective, based on the results of research that has been carried out through the stages of data collection, data processing and data analysis, it

can be concluded that e-Procurement has an effect on preventing fraud.

e-Procurement fundamentally changes the model from traditional procurement and is prone to fraud to a systematic electronic system with the hope of reducing the possibility of fraud by reducing direct meetings. The implementation of e-Procurement is believed to bring greater transparency in managing public finances to meet public needs through better resource allocation.

The factors that influence the hampered utilization of services available in the e-Procurement system optimally are due to limited knowledge of the IT infrastructure system for procurement actors and providers. Government agencies should conduct socialization and provide training related to system operations to procurement actors and recommend improving the system display to be user-friendly so that it is easier for users to access all services available in the system.

The results of this study provide implications for government agencies, especially in the Ministry of Maritime Affairs and Fisheries regarding the importance of increasing the implementation of electronic procurement systems for goods/services including optimizing knowledge about the e-Procurement system in this case including e-purchasing. By optimizing the implementation of e-purchasing which contains detailed information about product types, technical specifications, and prices from various providers, this system also provides many benefits, namely being able to speed up the procurement process because of clear standards, increasing cost efficiency by facilitating the selection of the best products at competitive prices, increasing accountability and transparency because all data can be accessed and monitored by all interested parties, and facilitating data management for parties involved in the procurement of goods or services.

This is in line with Presidential Regulation Number 12 of 2021 concerning Amendments to Presidential Regulation Number 16 of 2018 concerning Government Procurement of Goods/Services. As stipulated in Article 50 Paragraph (5) that the implementation of e-purchasing must be carried out for goods/services related to national and/or strategic needs as determined by the minister, head of institution, or regional head. Thus, optimizing e-purchasing supports government procurement of goods/services to become more modern, effective, and efficient.

1) Internal Control System for Prevention of Fraud in Government Procurement of Goods and Services

From the results of the t-test, it was found that the Internal Control System has a positive effect on preventing fraud in government procurement of goods and services.

The results of the study revealed by Ainun and Justinia (2024) in a journal entitled The Effect of Internal Control on Fraud Prevention in Procurement of Goods and Services (Study at Telkom Corporate University) revealed that the implementation of internal control has a significant effect on fraud prevention in procurement of goods and services at Telkom Corporate University. The results of this study conclude that the more effective the implementation of

internal control, the better the prevention of fraud in the procurement of goods and services.

The Ministry of Maritime Affairs and Fisheries implements the Government Internal Control System (SPIP) by monitoring/supervising and evaluating all procurement activities of goods/services periodically, the agency also conducts risk assessments which include risk identification (internal or external factors) and risk mitigation (classifying risks from high to low based on the potential for occurrence and the impacts caused) where the results of this risk assessment will later be used by the leadership as a basis for decision making.

SPIP has a very important role in supporting the success of the government procurement process. The effective implementation of SPIP can ensure that the procurement of goods/services is carried out transparently, effectively, efficiently, accountably, and in accordance with applicable regulations. Here are some ways in which SPIP can support the procurement of government goods/services to run well and can reduce the Risk of Deviation. The effective implementation of the Government Internal Control System (SPIP) will greatly support the success and smoothness of the supervision process for the procurement of government goods/services.

The results of this study provide implications for government agencies, especially the Ministry of Maritime Affairs and Fisheries, so that each employee understands and is able to explain their authority and duties appropriately in the internal control system. Conduct training related to internal control, including an understanding of the authority, duties, and reporting channels that exist in the organization. This training must be carried out periodically to update employee understanding.

In addition, an internal portal or application can be created that contains internal control guidelines and procedures that are easily accessible to all employees and provide open communication channels where employees can ask about tasks, authorities and reporting lines.

2) Whistleblowing System for Prevention of Fraud in Government Procurement of Goods and Services

From the results of the t-test, it was found that the Whistleblowing System has a positive effect on preventing fraud in government procurement of goods and services.

*Whistleblowing system*has a very important role, especially for the government, because the whistleblowing system allows employees or external parties to report suspected corruption, bribery, or abuse of authority that may be difficult for authorities to detect without inside information. With a safe and trusted reporting channel, this system helps reduce corrupt practices in government.

Chairi, Indriani, and Darwanis (2022) in their journal entitled Competence, Morality and Whistleblowing System in Fraud Prevention: Empirical Study in Indonesian Government Organizations explained that good quality whistleblowing system can be achieved if the system can make fraud reporters (whistleblowers) feel safe and their confidentiality is maintained so

that reporters will be more courageous to report things that are considered wrong and will not cause reporters to feel ostracized for reporting information that they know.

The results of this study provide implications for government agencies, especially the Ministry of Maritime Affairs and Fisheries, in terms of reporting alleged corruption, bribery, or abuse of authority and providing awards to reporters for proven reports of violations in accordance with agency policies.

Based on the agency's policy, several forms of awards that can be considered include non-financial awards in the form of certificates, award charters, or letters of appreciation stating that the reporter has made a positive contribution to maintaining the integrity of the organization, or career development opportunities as a form of appreciation, the reporter can be given the opportunity to take part in training or be developed in his/her career.

Rewards can be given in a way that does not compromise his/her anonymity, rewards given to the whistleblower should also be recorded in internal records for transparency and accountability purposes. If the report discloses major violations or involves influential parties, it is important to provide further protection to the whistleblower, which can be in the form of legal protection if necessary or prevention of retaliation by ensuring that the whistleblower will not experience retaliation or discrimination.

CONCLUSION

This study shows that the implementation of the e-Procurement system, Internal Control System, and Whistleblowing System has a significant influence in preventing fraud in government procurement of goods and services. Based on the results of this study, it is expected that the Ministry of Marine Affairs and Fisheries, as well as other government agencies, can be more serious in implementing these systems and continue to improve the quality of internal supervision and control so that the procurement process can run well and free from potential fraud.

For this reason, collaboration between regulators, academics and all related parties is very important in order to create a procurement system that is transparent, accountable and free from fraudulent practices that are detrimental to the state.

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