

# Implementation of Whistleblowing Web-based System in The Order of Mitigating the Risk of Fraud by Regional Inspectorates

Ali Muktiyanto<sup>1</sup>, Rini Dwiyani Hadiwidjaja<sup>2</sup>, Halim Dedy Perdana<sup>3</sup>

{ali@ecampus.ut.ac.id<sup>1</sup>, rini@ecampus.ut.ac.id<sup>2</sup>, halim@ecampus.ut.ac.id<sup>3</sup>}

Universitas Terbuka<sup>1,2</sup>, Universitas Sebelas Maret<sup>3</sup>

**Abstract.** This study aims to replicate and implement a digital or web-based anti-fraud system, namely the whistleblowing system (Sistem Complaints Fraud) (SiDAK) which is used by government internal auditors (regional inspectors) to receive complaints of fraud in the government environment. The research method was carried out in two stages: 1) testing the whistleblowing model using the Focus Group Discussion (FGD) method and interviews involving the subject of government internal auditors in West Manggarai Regency and Ende Regency, East Nusa Tenggara Province (NTT) and 2) designing a digital-based whistleblowing system that will be implemented 2 (two) the Inspectorate. The results of the FGD and interviews are a whistleblowing model that considers the behavioral aspects of government auditors. The results of the whistleblowing system will be implemented in regional inspectorates in 2 (two) districts. The research output is the copyright of the digital-based or web-based Fraud Complaint System (SiDAK).

**Keywords:** anti-fraud strategy, whistleblowing system, fraud.

## 1 Introduction

Association Certified Fraud Examiners (ACFE), 2020 in the book Report the Nation explains that more whistleblowing disclosures are revealed because the tips source method is used instead of using internal auditors and management reviews. Tip source is a common method used to report fraud when a reporter will be given a tip in order to report fraud that occurs within the company. This method is also supported by online reporting, namely using hotlines. Through this method, the control over fraud activities is quite effective with an increase in this hotline channel by 13% from 2010 to 2020. The survey results also explain that most of the employees who report fraud 50 percent, consumers 22 percent, unknown people 15 percent, vendors 11 percent, others 6 percent, competitors 2 percent, and shareholders or owners 2 percent. The results of this survey show that tipping is an effective method of revealing fraud in an organization.

Nurhidayat & Kusumasari (2017) in his research explains that an effective whistleblowing system is a system that has five aspects, namely human and ethical culture, policies, legal protection, organizational structure and processes, and procedures. Utami, Jori, & Hapsari (2017) in their research also explain that individuals will disclose fraud when the organization applies a closed reporting line (without identity).

A good reporting system is a system that can be easily accessed and is able to maintain the identity of the whistleblowers. Whistleblowing must have some definite purpose, in an effort to end current wrongdoing or prevent future wrongdoing (Near & Miceli, 1985). There are several types of whistleblowing reporting systems, including online and offline. Bierstaker, Brody, & Pacini, (2006) explain that the online reporting system itself is easy to use and fast in reporting fraud, one of which is by using hotlines. The hotline service allows anonymous reporting of errors, which helps lower the perception of the risk of retaliation as a consequence of whistleblowing.

Kaplan & Schultz (2009) tested the effectiveness of anonymous reporting channels to encourage individuals to report fraud. This type of reporting is still effective in encouraging individuals to report wrongdoing when they are in a company. Lowry, Moody, Galleta, & Anthony, (2013) recent events of a decline in company performance in various places further increase concerns about fraud that occurs in organizations, then increase the demand for legal protection by implementing an online reporting system.

A digital or web-based reporting system allows users to submit fraud reports via the internet. Thus, digital or web-based reporting systems are more effective than others. In this case, a good reporting system is also able to encourage whistleblowers in their intention to do whistleblowing. Whistleblower protection must also be implemented in the whistleblowing reporting system. Thus, someone's intention to do whistleblowing is higher due to the factors that support the system.

The leadership style is someone who encourages individuals to dare or not dare to do whistleblowing. Leadership style can be explained as environmental conditions that affect individuals in the organization so that they make decisions based on the style of the organization's leaders in running the organization. Gao & Brink (2017) mapped research results and formulated that ethical situations could potentially increase whistleblowing intentions. When the environment has ethical situations, whistleblowing intentions tend to be high. However, when the environment is unethical, the whistleblowing intention tends to be low. This research aims to test the whistleblowing model that is able to increase the intention of the government's internal auditors to have high whistleblowing intentions by considering the available reporting channels and the leadership style that is applied and perceived and designing a digital-based or web-based whistleblowing system based on a tested whistleblowing model.

## **2 Literature Review**

In doing whistleblowing, people who want to report must have an intention first. The intention to carry out whistleblowing must exist so that the reporting can run smoothly and the fraud can be resolved. The intention of someone in an organization can be created with protection

and convenience when reporting fraud. Chiu (2003) in his research explains that the individual's level of courage is not the only variable that drives whistleblowing intentions. Individual decisions to report still take into account supervisory support, informal policies, open door systems, reward systems, telephone hotlines, and formal confidential disclosure procedures.

American Institute of Certified Public Accountants (AICPA) stated that a functioning whistleblowing system is a channel where employees feel safe to report mistakes and one key aspect for employees to feel safe is when the whistleblowing process is anonymous. Disclosure of fraud using identity channels is hampered because of the retaliatory action that will be received by the whistleblower (Utami, Jori, & Hapsari, 2017). To that end, an effective whistleblowing reporting system is an anonymous way for employees to report violations. Therefore, the main part of the whistleblowing system is the part of anonymity, which gives whistleblowers the integrity needed to feel safe enough to inform about wrongdoing (Mekonnen & Sundh, 2014).

The theory of planned behavior is a theory that connects a person's beliefs and behavior. This theory explains that attitudes towards behavior, subjective norms, and perceived behavioral control, together form the intentions and behavior of individual behavior (Azjen, 1991).. Park, Rehg, & Lee, (2005) in their research found that Confucian ethics have a significant but varied effect on whistleblowing intentions. The research also explained that the last effort to protect the whistleblowers legally has faced resistance which sparked controversy. Confucianism and collectivism as the basis for denying legal protection to those who report wrongdoing, haunt the debate about whistleblower protection. Using the assumption that Confucian and collectivism attitudes differ at the individual level, this study examines their impact on whistleblowing intentions, hoping that it will assist in understanding the ongoing debates mentioned at the outset of this study as well as related controversies. Confucian ethics and collectivism seem to have a significant effect.

## **2.1 Relationship between Reporting Paths and Whistleblowing Intentions**

The reporting system is designed for various kinds of fraud, including reporting fraud in an organization. Kaplan & Schultz (2007) in their research examine three problems associated with the formation of reporting intentions to certain internal reporting channels. First, it examines how the presence of an anonymous internal reporting channel affects a person's intention to report using one of the two non-anonymous internal reporting channels management or the internal audit department. Ayers & Kaplan (2005) explain that the perception of costs and benefits of anonymous and non-anonymous reporting channels is limited. To date, it has not been explored whether the availability of anonymous reporting channels systematically influences one's reporting intentions for non-anonymous reporting channels.

Kaplan & Schultz (2007) in their research explain that from an organizational perspective a good internal reporting system is non-anonymous. Non-anonymous reporting systems offer opportunities to improve reporting integrity and enable more effective reporting systems to commit fraudulent acts that occur within the organization. Thus the first hypothesis can be formulated as follows.

H1: Government internal auditors who use digital or web-based reporting channels tend to have higher whistleblowing intentions than those using manual reporting channels.

## **2.2 Relationship between Leadership Style and Whistleblowing Intention**

An employee realizes the company's management mistakes, he has two alternatives whistleblowing or remaining silent. If employees want to report, they can report to someone who has the authority to investigate, detect, or stop the error or through the available reporting system (Gao, Greenberg, & Wong On Wing, 2013). There are several obstacles that prevent whistleblowers from intending to do whistleblowing (Gao & Brink, 2017). In addition, reporting channels managed by third parties can represent stronger procedural safeguards against anonymity and avoidance of threats (Association of Certified Fraud Examiners (ACFE), 2020). In a whistleblowing situation, individuals incur the social costs and benefits of whistleblowing. This study reports the results of an experiment involving accounting majors to ascertain their intention to externally on financial reporting a major fraud given certain personal and social consequences for each alternative. While a number of 75 percent of participants showed a tendency of uncertainty in whistleblowing intentions. The decision to whistleblowing or remain silent is the result of a difficult and complex decision-making process. Thus the second hypothesis can be formulated as follows. The decision to whistleblowing or remain silent is the result of a difficult and complex decision-making process. Thus the second hypothesis can be formulated as follows. The decision to whistleblowing or remain silent is the result of a difficult and complex decision-making process. Thus the second hypothesis can be formulated as follows.

H2: Government internal auditors who have a transformational leadership style will tend to have higher whistleblowing intentions than when they have a leader with a transactional style

## **2.3 Interaction between Reporting Paths, Leadership Styles, and Whistleblowing Intentions**

Gray (2004) explains that whistleblowers can capture and focus the attention of others. Another connotation is giving a sign that an action must be stopped, such as when a whistleblower makes a report. The image of a whistleblower is someone who gets the attention of others to stop a certain behavior. Whistleblowers also seek to stop behavior that is considered harmful to the company Gray (2004). In carrying out whistleblowing, a whistleblower also risks retaliation from the organization's superiors. Actions include dismissal, salary deductions, and ostracism within the organization.

Whistleblowers have legal protection when superiors to fire or otherwise treat them inappropriately in retaliation for whistleblowing either internally, to executive management, or externally, to the press or law enforcement authorities. Whistleblowers usually express their concerns externally only after they have not received a corrective response internally.

Whistleblowers have an important role in the progress of an organization because they think long-term by paying attention to the mission and success of their organization. Whistleblowers have the right to better legal protection and so does the public. The absence of whistleblower protection is the main disincentive for the employee concerned to act to protect the public by reporting fraud. Meng & Fook (2011) in their research explain that legal protection for

whistleblowers affects whistleblowing intentions in an organization. Thus, the intention to do whistleblowers is higher if they get legal protection. Thus the third hypothesis can be formulated as follows.

H3: The reporting line will increase the whistleblowing intention depending on the existing leadership style in the organization

### 3 Research Methods

This study uses a 2x2 experiment between subjects with a genuine laboratory type of experiment and a factorial design. The advantage of the experiment is its ability to explain the causal relationship between the dependent variable and the independent variable (internal validity). Subjects are government internal auditors in West Manggarai and Ende. The factorial design includes a group pressure variable consisting of two levels: the high group pressure and the low group pressure. The reporting channel variable consists of two levels, namely digital or web-based and manual. The manipulated variables were independent variables, namely reporting channels and group pressure, while the variables measured were the dependent variable (whistleblowing intentions). Experimental data were obtained in the Anti-Fraud System FGD which was held in 2 (three) cities in East Nusa Tenggara. Table 1 presents the experimental matrix. Subjects required in each group are 25 people, so a total of 100 subjects.

**Table 1.** Experiment Matrix.

		Leadership Style	
		Transformational	Transactional
Reporting Channel	Digital/web-based	Group 1	Group 2
	Manual	Group 3	Group 4

The subject acts as an inspectorate employee assigned to carry out PKPT at the Public Works Department. The subject is faced with fraud that occurs in the relevant agency. In Public Works, the fraud that occurred was in the form of corruption in the value of the construction project for livable houses and also corruption in the budget for the maintenance of facilities and infrastructure.

In the first stage, all subjects were divided into 4 groups which were done randomly. In the second stage, the subjects who have received groups are divided into each class provided based on modules with different treatments. In the third stage, each subject gets a module that has been prepared. Subjects in group 1, received an experimental module with a digital or web-based reporting system treatment and transformational leadership style. Subjects in group 2 received an experimental module with manual reporting system treatment and transactional leadership style. Subjects in group 3 received an experimental module with digital or web-based reporting systems and transactional leadership styles. Subjects in group 4, received an experimental module with manual reporting system treatment and transformational leadership style. In the fourth stage, Subjects filled in personal data for demographic testing that might influence decision-making. In the fifth stage, reading the experimental rules and answering general questions to find out in one group has heterogeneous subjects, there is randomization

in randomization. Then the subject is given manipulation questions in consideration of decision-making. The last stage is subject debriefing in order to return the subject to its original state. Then the subject is given manipulation questions in consideration of decision-making. The last stage is subject debriefing in order to return the subject to its original state. Then the subject is given manipulation questions in consideration of decision-making. The last stage is subject debriefing in order to return the subject to its original state.

The first stage is testing the manipulation check, which aims to find out the subjects who passed and did not pass the manipulation check. Next is a descriptive test of the subject and testing its effectiveness randomization with One Way Analysis of Variance (ANOVA). The purpose of the test is to determine the characteristics of the subject that affect the whistleblowing intention. The first and second hypothesis testing were processed using the independent t-test. Testing the third hypothesis using a two-way Anova to see whether or not there is an interaction between the two independent variables.

## 4 Results

Experiments models have been conducted at the Inspectorate of West Manggarai Regency, and Ende Regency. The experimental results obtained the results of 100 participants. From the results of the manipulation check, 96 people passed the manipulation check.

Before testing the hypothesis, randomization testing needs to be done first. The randomization test aims to determine whether demographic factors affect the subject's decision-making. Randomization testing was carried out by testing demographic factors on the characteristics of the subject to judgment using One Way ANOVA. Randomization is accepted as effective if the dependent variable, namely the intention to disclose disgrace, is not influenced by demographic characteristics.

**Table 2.** Testing the Effectiveness of Randomization.

		Mean	Std Dev	Sign
Gender	Men (N=70)	74.67	21.92	0.623
	Women (N=26)	75.62	19.62	
Position	Junior Auditor (N=70)	74.83	20.95	0.702
	Senior Auditor (N=26)	75.33	21.99	

The results of randomization testing in this study indicate that there is no influence between whistleblowing intentions and the demographic characteristics of the subject. The table shows that all demographic characteristic's significance levels are more than 0.05 (0.623 and 0.702). This means that the two demographic indicators which include gender and position do not influence the decision on a person's whistleblowing intention. Therefore, the results of the randomization test are said to be effective because demographic factors do not affect it, so only the manipulation treatment will affect the subject's decision.

Hypothesis 1 in this study is that government internal auditors who use digital or web-based reporting channels tend to have higher whistleblowing intentions than those using manual reporting channels. Hypothesis 1 is tested using the independent sample t-test.

**Table 3.** Results of Hypothesis Testing 1.

	N	Mean	Std. Deviation	T	Sig. (2-tailed)
<i>Reporting Channel</i>					
Digital	27	85.31	12,43	3,071	0.031
Manual	21	68.52	23,27	3,071	

Statistical testing shows the results significantly that there are differences in whistleblowing intention between subjects and conditions reporting channels both digital and manual at the significance level =5% (sig 0.031 < 0.05). This difference also proves that the whistleblowing intention of subjects using manual reporting channels will be lower than subjects using web-based digital reporting channels. The average score results in the manual reporting channel of 68.52 while subjects with digital reporting channels were 85.31. This shows that subjects who use digital reporting channels tend to have higher whistleblowing intentions compared to subjects who receive manual reporting channel conditions.

Several previous research studies have provided evidence relating to the influence of reporting channels on individual intentions to whistleblowing. These studies explain that when fraud is reported through digital and anonymous reporting channels, individuals are more likely to engage in whistleblowing (Ayers & Kaplan, 2005; Kaplan, 2007). This explains that digital (web-based) fraud reporting is more effective and selected by the reporter to be used compared to manual use.

Hypothesis two states that government internal auditors who have a transformational leadership style will tend to have higher whistleblowing intentions than when they have a leader with a transactional style.

**Table 4.** Results of Hypothesis Testing 2.

	N	Mean	Std. Deviation	T	Sig. (2-tailed)
<i>Leadership Style</i>					
Transformational	31	77,72	17.73	2,720	0.045
Transactional	17	67,13	23.92	2,773	

The results of statistical tests in Table 4 show that there are differences in whistleblowing intentions between subjects who are faced with transformational leadership style and transactional at a significance level of =5% (sig 0.045 < 0.05). The whistleblowing intention of the subject who is faced with the condition of transactional leadership style will be lower

than the subject in the condition of transformational leadership style. This can be seen through the results of the transformational leadership style score of 77.72 while the subject with the condition of the transactional leadership style of 67.13. This shows that subjects who are faced with transformational leadership style conditions tend to have higher whistleblowing intentions than subjects who are dealing with a transactional leadership style.

These results are consistent with the theory that the transformational leadership style is more supportive of the positive side of organizational members. This is different from the transactional leadership style which tends to achieve organizational goals and targets using a transactional approach. This causes individuals who are dealing with transactional leadership styles to have lower whistleblowing intentions.

This research is in line with the research Hartmann and Maas (2010), Murphy (2012), Hartmann and Maas (2010), Marshall and Ojiako (2013), and Richmond (2001). Hartmann and Maas (2010), Research by Richmond (2001), as well as Murphy (2012) found experimental evidence showing that high-Machs are more likely to engage in unethical behavior than individuals with low Machiavelli traits. Marshall and Ojiako (2013) argue that individuals with Machiavelli traits tend not to have the ability to feel moral guilt.

Hypothesis three states that reporting channels will increase whistleblowing intentions depending on the leadership style that exists in the organization. Testing the third hypothesis using Two Way Anova and the results are presented in Table 4.

**Table 5.** Results of Hypothesis Testing 3.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4012.939 <sup>a</sup>	3	1674.646	4.712	0.027
Intercept	146151.438	1	146151.438	464.716	0.000
Reporting Channel	2308.722	1	2308.722	6.496	0.019
Leadership Style	324.664	1	324.664	.914	0.361
Reporting Channel * Leadership Style	775.026	1	775.026	2.181	0.213
Error	14926.061	42	355.382		
Total	278700.000	48			
Corrected Total	19950.000	48			

a. R Squared = 0.774 (Adjusted R Squared = 0.746)

The test results show that the interaction between reporting channels and leadership style is 0.213 or greater than 0.05. This means that there is no interaction between reporting channels and leadership style, so it can be said that the third hypothesis in this study is not accepted. Leadership style is proven not to strengthen the interaction relationship between reporting channels and whistleblowing intentions. So, it can be said that someone who faces a transformational leadership style and digital reporting channel does not necessarily have a high whistleblowing intention and vice versa.

The empirical findings of this research support Curtis (2006); Robinson, Robertson, and Curtis (2012); Brink, Cereola, and Menk (2015) that there is an influence of reporting channels on whistleblowing intentions. However, this condition does not interact with the leadership style of the government's internal auditors. Whistleblowing intentions are due to the reporting



channel and not to leadership style. Individual factors are able to cause whistleblowing intentions but do not see the reporting channel for the occurrence of fraud.

## 5 Conclusion

There are several conclusions from this research; first, subjects who use digital reporting channels tend to have higher whistleblowing intentions compared to subjects who receive manual reporting channel conditions. Second, subjects faced with transformational leadership style conditions tend to have higher whistleblowing intentions than subjects who are dealing with a transactional leadership style. Third, leadership style is proven not to strengthen the interaction relationship between reporting channels and whistleblowing intentions. So, it can be said that someone who faces a transformational leadership style and digital reporting channel does not necessarily have a high whistleblowing intention and vice versa. Fourth, the fraud complaint system (e-SiDAK) is the output of the research which is a web-based reporting channel. This reporting channel was then implemented in the inspectorate of West Manggarai Regency and Ende Regency. This e-SiDAK subsequently received special awards and gold medals at the World Invention Competition in South Korea in August 2021, presented in 12<sup>th</sup> International Conference on Financial Criminology (ICFC) 2022 di University of Cambridge, United Kingdom on 25-27 August 2022 and was launched by the Head of West Manggarai and Ende. finally, the result of this research will carry out the evaluation of e-SiDAK in the Inspectorate of West Manggarai Regency and Ende Regency on 2023.

## References

- [1] Anggariani, DA, Kurniawan, T., & Holidin, D. (2017). Whistleblowing System in Indonesia's Directorate General of Tax. Atlanta Press.
- [2] Associate Fraud Examiners (ACFE). (2018). Report the nation. Associate Fraud Examiners (ACFE).
- [3] Association of Certified Fraud Examiners (ACFE). (2005). Detecting and deterring fraud using hotlines. ACFE.
- [4] Ayers, S., & Kaplan, SE (2005). Wrongdoing by Consultants: An Examination of Employees' Reporting Intentions. *Journal of Business Ethics*, 57, 121-124.
- [5] Azjen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 179-211.
- [6] Bierstaker, Brody, & Pacini. (2006). Accountants perceptions regarding fraud detection and prevention methods. *Managerial Auditing Journal*, 10, 520-535.
- [7] Carini, RM, Hayek, JC, Kuh, G., Kennedy, J., & Ouimet, J. (2003). College Student Responses to Web and Paper Surveys: Does Mode Matter. *Human Sciences*.
- [8] Chiu, RK (2003). Ethical Judgment and Whistleblowing Intention: Examining the Moderating Role of Locus of Control. *Journal of Business Ethics*, 43, 65-68.
- [9] Gao, & Brink. (2017). Whistleblowing studies in accounting research: A review of experimental studies on the determinants of whistleblowing. *Elsevier*, 38, 1-13.
- [10] Gao, J., Greenberg, R., & Wong On Wing, B. (2013). Whistleblowing Intentions of Lower-Level Employees: The Effect of Reporting Channel, Bystanders, and Wrongdoer Power Status. *Springer*, 17.

- [11] Gray, J.A. (2004). The Scope of Whistleblower Protection in the State of Maryland: A Comprehensive Statute Is Needed. *University of Baltimore School of Law*, 225-227.
- [12] Kaplan, & Schultz. (2007). Intentions to Report Questionable Acts: An Examination of the Influence of Anonymous Reporting Channel, Internal Audit Quality, and Setting. *Journal of Business Ethics*, 71, 110-111.
- [13] Kaplan, & Schultz. (2009). Intentions to report questionable acts: an examination of influence of anonymous reporting channel, internal audit quality and setting. *Journal of business ethics*, 71, 273-288.
- [14] Keraf, S. (2008). *Business Ethics*. Yogyakarta: Kanisius.
- [15] Lowry, PB, Moody, GD, Galleta, DF, & Anthony. (2013). The Drivers in the Use of Online Whistle-Blowing Reporting Systems. *Journal of Management Information Systems*, 30, 154-155.
- [16] Marcia P, Miceli, Near, J., & Schwenk, C. (1991). Who Blows the Whistle and Why. *Industrial and Labor Relations Review*, 45, 144-145.
- [17] Mekonnen, K., & Sundh, R. (2014). A qualitative study on the incentives of implementing or not implementing whistleblowing systems in Swedish listed companies. *Uppsala University*, 27.
- [18] Meng, TP, & Fook, OS (2011). Comparative analysis of whistleblower protection legislations in England, USA and Malaysia. *African Journal of Business Management*, 11246-11249.
- [19] Near JP, & Miceli M P. (1985). Organizational dissidence: The case of whistleblowing. *Journal of Business Ethics*, 4, 1-16.
- [20] Near, JP, & Miceli, MP (1995). Effective-whistleblowing. *Academy of Management Review*, 38, 279-708.
- [21] Nurhidayat, I., & Kusumasari, B. (2017). Strengthening the Effectiveness of Whistleblowing System A Study for the Implementation of Anti-Corruption Policy in Indonesia. *Journal of Financial Crime*, 710.
- [22] Park, H., Rehg, MT, & Lee, D. (2005). The Influence of Confucian Ethics and Collectivism on Whistleblowing Intentions: A Study of South Korean Public Employees. *Journal of Business Ethics*, 58, 387-388.
- [23] Sweeney, P. (2008). Hotlines Helpful for Blowing The Whistle. *Financial Executives*.
- [24] Utami, I, Jori, A., & Hapsari, AN (2017). Will Accountants Reveal the Disgrace of Fraud? *Journal of Multiparadigm Accounting*, 8, 458-459.
- [25] Yustrisia, Y. (2017). Legal Protection Against Whistleblowers in the Context of Combating Corruption Crimes in Indonesia. *Journal of Research and Scientific Tower ILMU*, 7, 100-102.
- [26] Zhang. (2008). The effects of perceived fairness and communication on honesty and collusion in a multi-agent setting. *The Accounting Review*, 1125-1146.