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Impact of Anti-Fraud Awareness, Fraud Detection Procedures, and Technology to Fraud Detection Skill

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ABSTRACT

Public complaints regarding indications of corruption in government institutions have increased. These complaints responded by increasing fraud red flag knowledge. Hopefully, understanding procedures and technology to trace fraud and growing skepticism in internal auditors will enhance fraud detection skills. This study aims to determine the factors influencing fraud detection skills, anti-fraud awareness, fraud detection procedures, and technology with professional skepticism as moderating variables. This study uses questionnaires distributed to the structural ranks, Head of Balai Besar, head of BMKG Station, head of division/field, sub-section/sub-sector, and BMKG internal auditors. The results showed that anti-fraud awareness, detection procedures and technology, and fraud prevention positively affected fraud detection skills. Professional skepticism is proven only to strengthen the influence of fraud detection and prevention technology on fraud detection skills. This research was used as a reference to identify factors affecting the fraud detection skills of internal auditors and leaders in the future. This research also serves as a reference a better anti-fraud awareness culture policy, improve fraud detection skills by updating procedures and technology used in the Meteorology, Climatology and Geophysics Agency environment (BMKG).

Keywords: Anti-Fraud Awareness; Fraud Detection; Prevention Procedures; Fraud Detection and Prevention Technology; Professional Skepticism; Fraud Detection Skill

1. INTRODUCTION

Fraud occurs in the public and private sectors. Fraud in the public sector impacts state losses, and fraud in the private sector affects poor performance. Experts have proposed various definitions of fraud. Zimbelman et al. [1] stated that fraud is an act carried out intentionally, consciously, knowingly, and willingly to misuse everything owned collectively (firm assets/state resources) for personal gain and to present wrong information to eliminate the traces. Cheating is different from unintentional error. Unintentional data entry errors are not fraudulent. However, if someone, with his ingenuity, manipulates financial statements to attract potential investors to invest in his company, this is called fraud.

In 2018 the Corruption Court, Central Jakarta District Court sentenced the former head of the BMKG Research and Development Center for a corruption case in the procurement of an earthquake precursor monitoring system for the 2014 fiscal year. In this case, the state lost 2 billion Rupiah. In 2012, the Ambon State Attorney's Office investigated the alleged corruption case in radar

procurement worth 16 billion in the 2009-2010 fiscal year. This case dragged the head of the Ambon Meteorological Station, but this was purely the fault of the winning bidder, who was late in completing the procurement process. These cases reveal due to complaints from the public. Protests by the public can provide an early signal of fraud.

An increasing number of public complaints to the KPK and complaints regarding indications of cases at the BMKG show that the level of public awareness of the existence of criminal acts of corruption has increased. This concern is applied in government institutions to create an anti-corruption culture. However, caring alone is not enough without being supported by the level of knowledge of state civil servants regarding procedures and technology that can detect fraud. These bits of learning constitute the methods comprising managerial communication about intolerance to fraudulent activities, implementing transparent performance and remuneration schemes, ongoing admissions, and screening. The most significantly encouraging culture is fraud awareness [2]. Therefore, auditors and managerial levels, top

management, and directors must understand the red flag signals. Red flags are clues or indications of something unusual and require further investigation [3]. These red flags can take the form of many things, such as accounting anomalies, unexplained transactions or events, unusual transaction elements, changes in a person's behavior or characteristics, and else.

Management is the first line that should detect an act of fraud. A leader and auditor must have a high awareness to find traces of fraud. Poor internal controls and a lack of ethical values are the most likely reasons an entity threaten by a wrongdoing act. Ethical policies and a sound code of conduct are essential fraud risk management processes. Anti-fraud awareness has a positive effect on the ability to detect fraud. The auditor should know procedures and technology that can find traces of fraud. The research of Omar *et al.* [4] stated that the procedure regarding the existence of a forensic accountant is crucial to minimize the number of fraud occurrences in the public sector. A forensic accountant has the advantage of investigating outside of financial statements compared to a traditional auditor. Although organizational forensic accountants are still very minimal, detecting and preventing fraud has the highest average effectiveness. Zimbelman *et al.* [1] found that technological advances can result in proactive fraud detection by analyzing data and transactions techniques to isolate fraud symptoms, such as looking at trends, figures, and other related anomalies. This procedure and technology are a unified way to detect fraud.

At all stages of the audit, an auditor must be skeptical, have an attitude that includes a questioning mind, be aware of possible misstatements due to fraud or error, and critically assess audit evidence. Therefore, an auditor's vigilance consists of the possibility of a material misstatement of the financial statements because fraud or error can occur in each phase of the audit. Previous research has proven that this skepticism has a positive effect on fraud detection skills [5].

This study aims to examine the effect of anti-fraud awareness, fraud detection, and prevention procedures and technology on fraud detection skills, with professional skepticism as a moderating variable.

2. METHOD

The population in this study was all civil servants (PNS) at the Jakarta Meteorology, Climatology, and Geophysics Agency, with 4650 people spread throughout Indonesia. Respondents are leaders and internal auditors who work at the Meteorology, Climatology, and Geophysics Agency in all MKG offices throughout Indonesia, the sampling method was convenience sampling. The research subjects were Auditors at the BMKG Inspectorate, echelon 3, 4 central BMKG officials, Heads of Halls, heads of divisions and directors

of sub-sections of the MKG Center Region 1 (Medan), Region II (South Tangerang), Region III (Bandung), Region IV (Makassar), Region V (Jayapura). We also sent samples to the station head, section head, and subdivision head for Meteorological Station Class 1 Batam, Tangerang, Soekarno Hatta, Maritime Serang, and Kemayoran.

There are three independent variables, one moderating and one dependent. Fraud detection capability is the ability of a person to identify indications of an act of fraud by recognizing the symptoms of fraud or fraud symptoms. Anti-fraud awareness is an effort to raise awareness about fraud prevention efforts by all parties in the organization. Fraud detection and prevention procedures are procedures used by a person to find evidence/indications of fraud. Fraud detection and prevention technology is a technology used by a person in finding evidence/indications of fraud. Professional skepticism is an attitude that includes a mind that is constantly questioning and critically evaluating audit evidence. Measurement instruments for anti-fraud awareness variable and fraud detection ability measurement using Prasetya's research [6]. For the fraud detection and prevention procedure variables, fraud detection and prevention technology and professional skepticism developed by Imam *et al.* [7]. All statements in questionnaires are on an ordinal scale from strongly disagree (1) to strongly agree (5). There are 99 statement items in the questionnaire, with details: 10 statements for the Anti-Fraud Awareness variable, 24 for the fraud detection and prevention procedure variable, 9 for the fraud detection and prevention technology variable, 23 for the Fraud Detection Ability variable, and 18 items for Professional Skepticism as a moderating variable.

3. RESULT AND DISCUSSION

One hundred thirty-four respondents have filled out the questionnaire, but eight declined due to incomplete questionnaires, and 126 were processed. The majority of respondents are 36 to 50 years old, 73 (58%) person, Bachelor's graduates are 75 (60%) respondents, the most job tenure is 16-25 years as many as 56 (44%) respondents. Job position's majority as head of section and field head 56 (44%) respondents. Most respondents are managerial staff experts with the duties and functions of controllers and supervisors from each part of the BMKG.

All indicators of each variable have an Average Variance Extracted value above 0.5 and Cronbach's Alpha value above 0.6, means that all indicators are valid and reliable.

3.1. Hypothesis Testing

We performed a Regression analysis to answer the research questions. If the coefficient (positive or negative) fits, and the significance value is less than 5%, the independent variable affects the dependent variable.

Table 1 Hypothesis Testing

	Expected	β	Sign
Anti-Fraud Awareness	+	0.218	0.007*
Fraud Detection & Prevention Procedures	+	0.271	0.024*
fraud detection and prevention technology	+	0.345	0.012*
Professional Skepticism	+	0.180	0.007*
Moderating 1	+	0.049	0.448
Moderating 2	+	-0.403	0.021
Moderating 3	+	0.374	0.027*

Dependent Variable: Fraud Detection skill

Moderating 1: Professional Skepticism*Anti Fraud Awareness

Moderating 2: Professional skepticism* Fraud Detection & Prevention Procedures

Moderating 3: Professional Skepticism* fraud detection and prevention technology

*) sign at 5%

3.2. Discussion

Anti-fraud awareness has a positive effect on fraud detection ability. The results of this study are consistent with the behavior theory, which states that changes in behavior are the result of experience. The experience of making employee behavior to be able to have an instinct of concern for the existence of fraudulent acts can provide benefits in the morning of creating fraud-free conditions in an organization. If all managerial levels have anti-fraud awareness that can push into positive actions to conduct good fraud surveillance/detection, the organization will become an anti-fraud cultured organization. This result is supported by Prasetya's research [6] on internal auditors at the Meteorology, Climatology and Geophysics Agency which states that 98% of the total internal auditors have anti-fraud awareness. Othman *et al.* [7] research on 53 accountants and internal auditors in public sector organizations in Malaysia state that respondents are very aware of reporting and are responsible for detecting fraudulent acts. In other words, the higher the anti-fraud awareness, the higher the fraud detection ability. These results are in line with Wulandari *et al.* [8], Yuniarti [9] in their research that anti-cheating awareness positively affects the ability to detect fraud. Fraud detection and prevention procedures positively affect the ability to detect fraud. A leader in general and auditors, in particular, have ways and techniques in assessing whether fraud was committed by someone so that they can immediately detect fraud. The more and more various fraud detection and prevention procedures implemented to detect fraud, the higher a person's fraud detection ability will be.

The results of hypothesis testing proved that Anti-Fraud Awareness, Fraud detection and Prevention procedures, Fraud detection and prevention technology, and professional skepticism positively affect fraud detection skills. Professional skepticism strengthens the positive effect of fraud prevention technology on fraud detection skills.

Fraud detection and prevention procedures positively affect the ability to detect fraud. This finding supports the behavior theory, which states how the behavior is formed as a result of learning. This theory prioritizes elements and small parts, is mechanistic, emphasizes the role of the environment, emphasizes the role of abilities and learning outcomes obtained in generating behavior. A leader in general and auditors, in particular, have ways and techniques in assessing whether fraud was committed by someone so that they can immediately detect fraud. The more and more various fraud detection and prevention procedures implemented to detect fraud, the higher a person's fraud detection ability will be. The results of this study have not been supported by other studies because there is no research on testing between these variables.

However, Prasetya's investigation [6] states that effective detection and prevention procedures improve internal control, whistleblowing policies, operational audits, fraud detection, prevention training, cash reviews, and inventory monitoring will narrow the room for fraud perpetrators. Professional skepticism has a positive effect on fraud detection ability. The more critical in evaluating and analyzing, the better the identification of fraud symptoms will likely be. In other words, the higher the professional skepticism, the higher the ability to detect fraud that has occurred or may be occurring. This research is in line with a study conducted previous researcher [10]–[13].

Fraud detection and prevention technology have a positive effect on fraud detection ability. The findings of this study support the behavior theory, which prioritizes elements and small parts, is mechanistic, emphasizes the role of the environment, emphasizes the role of abilities

and learning outcomes obtained in generating behavior. Learning to create the latest technology to reduce people who intend to commit fraud must always remain by leaders and auditors. Technology development is an essential thing in running a company. Technology provides employees with convenience as a tool in running a system created in each company. In addition, technology can also assist leaders and auditors in detecting a system discrepancy and even detecting the occurrence of an act of fraud. In other words, the more sophisticated the technology used to detect fraud, the higher the ability to detect fraud. The results of this study have not been supported by other studies because there is no research on testing between these variables. However, Li *et.al* [5] research described that the most effective technology for fraud detection is password protection and password protection installation.

Professional skepticism has a positive effect on fraud detection ability. Professional Standards for Certified Public Accountants Section 230 PSA No. 04 defines professional skepticism as an attitude that includes a constantly questioning mind and critically evaluating audit evidence. High professional skepticism from an auditor and leaders will reduce the possibility of making inappropriate decisions. These results support the attribution theory, where the higher the attitude of skepticism owned by leaders and auditors, the higher their actions will be. Fraud detection capability is the ability to recognize and identify fraud symptoms. It means that the more critical in evaluating and analyzing, the better identifying the signs of fraud will likely be. In other words, the higher the professional skepticism, the higher the ability to detect fraud that has occurred or may be occurring. The results of this study are consistent with previous research [10], [20], [13], which shows that there is a positive effect of an auditor's professional skepticism on fraud detection abilities.

Professional skepticism did not moderate the positive effect of anti-fraud awareness on fraud detection ability. Researchers argue that a higher person's professional skepticism requires extra and broad thinking to explore an act of fraud. Not only additional thoughts but also this must be accompanied by sufficient free time to examine and criticize an act of fraud in-depth, and this attitude is lacking in the structural ranks at BMKG.

Professional skepticism does not moderate the positive effect of fraud detection and prevention procedures on fraud detection ability. Someone who has a good attitude of professional skepticism will easily find a fraud, have a mindset that includes a questioning mind and evaluate the available evidence critically. In seeking and providing proof, an auditor or leader needs to know better a procedure that can detect fraud. These results explain that good detection and prevention procedures supported by professional skepticism will not increase the ability to detect fraud. The researcher argues that the

higher a person's professional skepticism requires accuracy and the many series of methods fits to make the findings more convincing for indications of fraud. The use of many procedures will require a long time to deepen the hustle, thereby reducing a person's ability to detect fraud.

Professional skepticism reinforces the positive effect of fraud detection and prevention technology on fraud detection capabilities. According to International Standards on Auditing (ISA) section 200, skepticism means making critical judgments with a questioning mind of the validity of the audit evidence obtained and warnings (alerts) to audit contradictory evidence or question the reliability of documents and responses. To questions and other information obtained from management and parties related to the company. Detection technology such as protection software/applications will support how a leader and auditor detect fraud. A good understanding of detection and prevention technology improves fraud detection ability accompanied by professional skepticism. Professional skepticism makes audits take longer, but fraud detection work is more accurate and precise with technology.

4. CONCLUSION

This research has proven Anti-Fraud Awareness, Fraud detection and Prevention procedures, Fraud detection and prevention technology, professional skepticism have a positive effect on fraud detection skills. Professional skepticism strengthens the positive impact of fraud prevention technology on fraud detection skills. We conducted the research only at the Meteorology, Climatology, and Geophysics Agency, so it cannot be generalized to other government or private institutions.

The managerial implication is that BMKG should create a culture of anti-fraud awareness for all employees. This study proved that applied anti-fraud awareness could increase the ability to detect fraud. In addition, the BMKG's managerial ranks and APIP could perform a reliable mechanism in detecting fraud.

Suggestions for further research, the number of samples can be developed to be more representative of the population in Indonesia by expanding the distribution of questionnaires to employees. Otherwise, the result is more generalized for the common interest using other government institutions or private institutions and researching other factors that affect fraud detection abilities such as workload, skills, competencies, training, personality type, and others.

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