



## The Effectiveness of Fraud Prevention and Detection Methods at Universities in Indonesia

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### ABSTRACT

Some cases of corruption have taken place in several universities in Indonesia. To prevent and handle the cases, internal auditors play pivotal roles in detecting and preventing fraud. Therefore, effective methods to detect and prevent fraud are needed. The methods are expected to set the appropriate measures to detect and prevent fraud effectively. This research proposed a question how the internal auditors perceive the effectiveness of fraud detection and prevention methods. The research aimed to conduct a descriptive analysis towards the auditor's fraud-related knowledge and examine the internal auditor's perception towards the effectiveness of fraud detection and prevention methods. The objects of this research were internal auditors who worked at universities in Indonesia where the respondents were randomly selected. This study used a series of questionnaires to gather the information from the previously-surveyed respondents. The questionnaires in this study referred to the previous research conducted by Bierstaker et al. (2006). The results of this research reveal that the most effective fraud detection and prevention procedures are operational audits, internal control review and improvement, cash reviews, code of sanctions against suppliers/contractors and ethics officers. Meanwhile, five most ineffective of fraud prevention and detection procedures are virus protection, financial ratio, firewalls, filtering software, and organizational use of forensic accountants. The results of this study differs from the previous research conducted by Bierstaker et al. (2006), which suggests that the most effective procedure for fraud detection and prevention is the use of information technology.

**Keywords:** Fraud Prevention, Fraud Detection, Universities, Indonesia

**JEL Classification:** K4

### 1. INTRODUCTION

In August 2012, the State Finance Accountability Agency and the House of Representatives officially accepted the reports of audit results by the Supreme Audit Agency concerning the corruption cases that hit 16 state-run universities in Indonesia. The agency found some indications of fraud in the budget preparation done by the Ministry of National Education, Nazaruddin's company and several legislators.

Some other corruption cases were then disclosed to public. To mention several cases, the ex-rector of Soedirman University (Unsoed), Purwokerto was sentenced to 2.6 years in jail added with IDR 50 million fine or 2-month imprisonment as he was allegedly involved in the corrupted project involving Unsoed

and PT. Aneka Tambang (Antam) amounting to IDR 2.1 billion. The case also involved the Deputy Rector IV of Unsoed and the head of the university's printing unit. Corruption also hit the University of Indonesia. There was an indication of corruption in the process of budgeting, procurement of goods and services in the project of information technology (IT) installation for the Central Library at the University of Indonesia in 2010-2011. There was also a graft case in the University of Jambi that involved the top officials of the university related to the corrupted procurement of medical equipment in 2013. The University of Tadulako was also hit by a corruption case involving Autonomy Preparation Grants of the university in 2003-2005 which amounted to IDR 7.5 billion. Similarly, corruption also took place in the procurement of pharmaceutical equipment at the faculty of pharmacy and that of ethnomusicology equipment at the faculty of literature in 2010

at the University of North Sumatra. The last was the corrupted construction work of the Educational Hospital for Infectious Diseases and Tourism of the University of Udayana in 2009-2011 which was currently under investigation by the Corruption Eradication Commission.

Learning from the cases above, the role of internal auditors at university is obligatory to ensure that the accountability of financial reporting is well kept and to reinforce the internal control as a way to prevent fraud and to safeguard the university's assets. In terms of detecting and preventing fraud, the role of internal audits is crucial, therefore, effective methods are deemed necessary to detect and prevent fraud and to set solid steps to crack down fraud. The method becomes the strong foundations to detect and prevent fraud practices.

The profession of internal auditor has developed well. This corresponds to what Zamzami (2015) confirms that how the profession of internal auditor develops over time describes the pivotal roles and functions of internal audit in an organization. Initially serving as a clerical officers, internal auditor is developing into a strategic partner for the top management of an organization. There is a role switching from a watchdog to be a consultant and catalyzer.

This research focused on the main issue on how effective are the methods for fraud detection and prevention. It therefore raises a question: How do the internal auditors perceive the effectiveness of the methods for fraud detection and prevention?

This research aimed to descriptively analyze the understanding of the auditors related to fraud practices and to examine the perceptions of internal auditors on the effectiveness of the methods for fraud detection and prevention.

## 2. LITERATURE REVIEW

The previous research conducted by Bierstaker et al. (2006) concludes that the research observes how far the accountants, internal auditors, and certified fraud examiners make the best use of the methods for fraud prevention and detection including the software along with their perceptions towards the effectiveness of the methods. The result of the research indicates that firewall, virus, protector of password and internal control are used for fraud wash out. On the other hand, continuous audit, sampling, mining data, forensic accountant and digital analysis software are rare despite their effectiveness.

Sengur (2012) summarizes that external audit is more effective for the prevention of fraudulent financial reports than that of misused assets and corruption. Similarly, a proper regulation is better for preventing fraudulent financial reports than for preventing misused assets and corruption (Alamer, 2015a; 2015b).

Concerning the effectiveness of fraud prevention and detection techniques. Rashidah and Irda (2014) suggest that banks should not depend solely on a single method to cope with fraud. The banks should instead implement checks and balances to identify

loopholes in the bank internal control system and to upgrade the methods for more effective fraud detection and prevention. This research recommends the use of software protection with password protection, firewall and filtering software to be installed on the computer system to prevent cybercrimes like phishing and other Internet scams. The techniques for another other type of fraud like misused assets, however, should be different. This type of fraud may prompt notification of strategies such as inventory observation and other security measures.

Below are possible techniques for prevention and detection of fraud as follows:

- a. Operational audits: Conducted on a regular basis, operational audits by the internal auditor is expected to minimize fraud practices. Performance audit is also done to assess how the auditee uses the resources effectively and efficiently to meet particular project objectives. Resource management shall include procedures, processes and performance of the human resources involved in the the management function (Zamzami, 2015)
- b. Internal control review and improvement: Internal control is mostly taken as one of the possible ways for prevention of fraud practices. Internal control is established to ensure that honesty among the officers involved is well upheld (Bologna, 1993; Haugen and Selin, 1999)
- c. Cash reviews: Given that cash is the most liquid assets and is prone to scams, cash review is held necessary to ensure adequate protection to the cash. Fraud can affect financial statement trends and ratios. Accounts that are manipulated to conceal fraud are likely to reflect unusual financial correlation with other fraud-free accounts (Bierstaker, et al., 2006)
- d. Ethics officers: Code of conduct is part of the control environment to prevent and detect fraud. As Muhammad (2001) states, code of conduct is basically code of ethics as the results of applied ethical thinking of particular professions, therefore, it should be adjusted to catch up with the latest development of science and technology.
- e. Password protection: The complexity of password refers to inverse relationship on how to make an effective and usable password. As a result, when a password is too complex, the user will write it down, placing the password at risk (Gerard et al., 2004).

Slameto (2010. p. 102) highlights that the perception is the implicated process of entry/input of messages or information into human minds, through which human continuously connects with their environment with their five human senses.

Errors on the financial reports split into human errors and fraud in which the actions underlying the irregularities are the distinguishing factors. Human errors are accidental while fraud is intentional (IAI, 2001).

## 3. METHODOLOGY AND DATA

This research targetted the internal auditor staffs who worked at universities in Indonesia. Previously surveyed, the respondents

were randomly selected. This research used questionnaires, which were similar with the ones used by Bierstaker et al. (2006) to help collecting the information from the respondents. The research validity was carefully examined on the questionnaires to ensure that the respondents' answers were valid and not biased.

The questionnaires consisted of two parts i.e. the respondents' profiles and the effectiveness of fraud prevention and detection. Every respondent was obliged to convey opinions towards the effectiveness of each technique or basic strategy based on four points along in the Likert scale ranging from "very ineffective" (scored one) and "very effective" (scored four). This survey was done from May to August 2015 through mails, direct delivery and online completion. Among 100 questionnaires distributed to the internal audit office of universities throughout Indonesia, only 44 questionnaires were completed and sent back.

## 4. RESULTS AND DISCUSSION

### 4.1. Respondents' Profiles

This research involved 44 respondents who were the internal auditors from 20 state-run universities and private universities in Indonesia. The data processed showed that the respondents' job experience in accounting within 5 years are categorised into three groups as Table 1 reveals.

The respondents with <3 years of job experience in accounting included 18 people (41%), while 17 respondents (39%) were of 3-7 years of job experience and the rest 9 respondents (20%) had more than a 7-year job experience. The information complied with the development of internal audit profession at universities. To note, most universities have managed their own internal audit office for 6-7 years. Based on the education level, 44 respondents (73%) completed their bachelor (S1) degree while 27% respondents finished their master degree. Table 2 shows the proportion of the respondents in terms of certification.

Table 2 shows that 4 (14%) respondents were certified as accountants, while 2 (5%) respondents were internationally certified accountants and the rest 32 respondents (73%) were uncertified in accounting and the other 4 (7%) respondents were certified in the fields of study beyond accounting.

**Table 1: Length of job experience**

Job experience (years)	Number of people (%)
<3	18 (41)
3-7	17 (39)
>7	9 (20)

Source: Authors' computation

**Table 2: Certification variety**

Certification variety	Number of people (%)
Akt/accountant	4 (14)
CA/certified accountant	2 (5)
Uncertified participants	32 (73)
Other certified participants	4 (8)

Source: Authors' computation

### 4.2. The Effectiveness Assessment

As the collected questionnaires indicated, 20% respondents assumed that fraud practices at their university were likely to increase and 68% respondents estimated that the fraud practices at their university would not increase. Meanwhile, 11% respondents had no idea whether or not the fraud activities would increase. The respondents who predicted about increasing fraud activities were of opinion fraud practices that insufficient attention was given by the university or the internal audit office, no proper system of internal audit was well established despite fast growing university and no sufficient monitoring towards the follow-up of audit results which led to possible fraud in the future. In addition, the respondents who were unable to predict increasing fraud practices were mostly fresh officers in the internal audit office, therefore, they have no enough experience in the area.

Further, 43% respondents claimed that fraud practices were done at the university they worked at while 27% respondents stated that no fraud practices took place at their workplace. Meanwhile, the rest 30% respondents did not know whether or not fraud practices occurred at their workplace university. On average, the universities suffered from IDR 1,998,571,429.00 loss within 2.5 years.

The gathered data suggested that 91% respondents would submit the report of audit result to the university rector, 7% respondents would give it to the supervisory board or audit committee while the rest 2% respondents submitted the report to other parties.

Table 3 shows how internal auditors at universities in Indonesia assessed the effectiveness of procedures for detection and software used for preventing fraud practices.

Table 3 summarizes that five most effective techniques for fraud detection and prevention software are operational audits (5.45), internal control review and improvement (5.43), cash reviews (5.41), code of sanctions against suppliers/contractors (5.39) and ethics officers (5.36). Meanwhile the least effective techniques are virus protection (3.66), financial ratio (3.64), firewalls (3.64), filtering software (3.48), and organizational use of forensic accountants (3.43). The effectiveness was assessed from the average answers of respondents related to detection procedure of fraud. Further, while 52% respondents stated that the software was internally developed, 7% respondents said that it was externally done. Meanwhile, the rest 41% respondents stated that no computer-based audit application has been in use. In terms of application, 46% respondents used Microsoft Office, 2% of them worked with ACL application, 11% respondents utilized their self-upgraded application, and the rest 41% respondents used a computer-based audit application.

## 5. CONCLUSION AND OPINION

The result of this research formulates effective procedures of fraud detection and prevention based on the perception of randomly selected internal auditors of universities in Indonesia as the respondents. The data analysis of the research shows that the five most effective procedure for fraud detection and prevention are operational audits, internal control review and improvement, cash

**Table 3: The effectiveness of fraud prevention and detection techniques**

Fraud prevention and detection techniques	Effectiveness	Degree
Ethics policy at universities (workplace)	5.23	9
Internal control review and improvement	5.43	2
Reference checks on employees	4.66	21
Employment contracts	5.07	14
Fraud auditing	4.89	18
Fraud reporting policy	4.82	19
Fraud vulnerability reviews	4.7	20
Fraud hotline	4.05	24
Whistle-blowing policy	4.39	23
Operational audits	5.45	1
Organizational use of forensic accountants	3.43	34
Fraud prevention and detection training	4.91	17
Ethics training	5.14	12
Surveillance equipment	5.3	6
Increased attention of senior management	5.07	15
Code of sanctions against suppliers/ contractors	5.39	4
Increased role of audit committee	5.09	13
Surveillance of electronic correspondence	3.95	25
Staff rotation policy	5.23	10
Security department	5.27	8
Employee counseling programs	4.55	22
Cash reviews	5.41	3
Inventory observation	5.3	7
Bank reconciliations	5.23	11
Ethics officers	5.36	5
Discovery sampling	3.84	26
Data mining	3.7	28
Digital analysis	3.68	29
Continuous auditing	3.8	27
Financial ratios	3.64	31
Virus protection	3.66	30
Password	4.93	16
Firewalls	3.64	32
Filtering software	3.48	33

Source: Authors' computation

reviews, and code of sanctions against suppliers/contractors and ethics officers.

On the other hand, the five least effective of fraud prevention and detection procedures refer to virus protection, financial ratio, firewalls, filtering software, and organizational use of forensic accountants. The result of this research differs from the previous research conducted by Bierstaker et al. (2006), which suggests that the most effective procedure for fraud detection and prevention is

the use of IT. This fact relates to the insufficient use of IT for fraud detection and prevention in Indonesia particularly at universities.

The results would be different if the respondents were the internal auditors of multinational companies who are IT savvy. This phenomenon should drive the administrators of universities to make the best use of IT for fraud detection and prevention. The future research is expected to include respondents from different background such private companies or government's agencies to seek for finding among different institutions.

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