

The Implementation of E-procurement System: Indonesia Evidence

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Abstract. Indonesia has implemented e-procurement system to struggle fraud in the procurement process. The purpose of this research is to examine e-procurement in a relationship for reducing fraud. This research uses quantitative approach by distributing questionnaires to 159 employees, 100 usable. The main finding suggests e-procurement system has a positive relationship and significant to fraud prevention that emerging expectation to eradicate fraud in the procurement process. The research gives a knowledge to the government to use e-procurement in all of procurement processes in order to prevent fraud.

Keywords: fraud, e-procurement, Indonesia.

1 Introduction

Information technology has changed rapidly institution's behavior in buying and selling the goods and services. In the digital era, the Indonesian government has adopted technology for many purposes including procurement process. E-procurement is an online system that can streamline the procurement process [1]. The potential benefits of e-procurement are greater transparency and improve accountability [2] and reducing corruption risks [3]. The Indonesian government in 2008 has created INAPROC (Indonesia Procurement), a national e-procurement system to procure and deliver goods and services electronically [4]. Then, Presidential Regulation No 54/2010 has been issued to regulate procurement processes are executed electronically. The purposes are to improve effectiveness, transparency, accountability, and the procurement process can be accessed by stakeholders.

However, the fact in Indonesian public sector, many cases of corruption have taken place in the procurement process. According to Indonesia Corruption Watch (ICW), in 2015, Indonesia suffered Rp. 3.107 trillion (US\$ 230 million) loss caused corruption in procurement process [5]. The Corruption Eradicate Commission (KPK) reports corruption in procurement is the second largest type of corruption in Indonesia [6]. Indonesia government focuses on combating corruption in the procurement process. Presidential Instruction No 7 Year 2015 has issued to prevent corruption in all government levels.

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Indonesia government wants to advance e-procurement system for better monitoring procurement process. He reminds that building a good, effective, and comprehensive system is important and help to be corruption prevention [7] .

Research has been conducted on Indonesian e-procurement. According to [8], the implementation of e-procurement was visible but not accountable. It gives an opportunity to conduct fraud such as corruption and bribery, because e-procurement system is not implemented effectively. Therefore, internal audit and internal control are necessary to complete the fraud prevention [9]. Internal audit is established to monitor the activities of organization and to control irregularity actions. Internal control is ensuring the procurement process is performed in compliance with statutes and regulations [10]. This paper is organized with the following structure. The following part describes the literature review and development of hypotheses. The next part contains research methodology, then explains the results and research discussions. The last part is the conclusion, implication, and future research suggestion.

2 Literature review and hypotheses development

2.1 Fraud and Prevention in Procurement

Fraud in public procurement is increasing especially in developing country including Indonesia. As stated by Transparency International Report, Huge sum of money from taxpayer's are spent by governments to procuring goods and services with so much money changing hands. Hence, government activities offer temptations and opportunity to fraud [11]. Indonesia is ranked as one of the most corrupt countries in South East Asia with corruption in public procurement as a serious problem. Procurement fraud is established by perverting awarding public contract and tenders. At bidding process, the bidders have used coercive power to win the process. The bidders can not submit bidding documents and be ignored by public official because of bidder's influence. According to [3], public official and bidders involve directly or indirectly to create a monopoly power in procurement process. According to KPK, ineffective budget and collusion emerge fraud in government procurement process [12].

In order to tackle fraud in procurement, Indonesia government concern to governing public procurement process which emphasize on transparency and accountability. Indonesia has created procurement online system namely e-procurement to prevent collusion and corruption in procurement process. E-procurement covers electronically bidding process which provides real-time information for the bidders to check their status, approval, or rejection reason. E-procurement system offers the clean procurement process which close opportunity to collusion and corruption [13]. To complete procurement fraud prevention, Indonesia government needs to increase surveillance at procurement process. Nowadays, Lack of surveillance in procurement process has been easily used by corrupt public official and outside parties.

2.2 E-procurement

Procurement is the acquisition of goods or services by an organization [1]. Prior to e-procurement is implemented, the procurement process is executed traditionally. The government and the vendors or suppliers can meet physically to deal for buying goods and services. This condition has a weakness that emerge fraud occurs in the government. The weakness can be used by vendors/suppliers to bribe the public official to select or appoint

their company as a vendor that provide goods or services. It makes the procurement system is not transparent and accountable [3].

The reformation on procurement system has been conducted after many cases of procurement create fraud opportunities. The procurement process should be done transparently and can be monitored. E-procurement is a new way to procure the goods and services electronically. E-procurement is also described as a procurement automation process which improves competition among the suppliers or providers. The implementation of e-procurement can improve the effectiveness and efficiency over traditional process [4]. E-procurement is also implemented to reduce the opportunity of occurrence of fraud in government area [3].

As regulated by Presidential Regulation No 54-2010, there are three types of electronic procurement in Indonesia, they are *e-tendering*, *e-catalog*, and *e-purchasing*. *E-tendering* is process to select suppliers, conducted transparently and all of the suppliers have a chance to offer their goods and services via online. *E-catalog* is electronic information system which contains information about the product in detail. *E-purchasing* is process to purchase goods and services through *e-catalog* system. The procurement process is conducted through the National Procurement Agency (LKPP) and supervised by National Development Planning Board (Bappenas).

Research in procurement system finds that e-procurement system is the good way to struggle fraud. As explained by [3], government must create and implement e-procurement system to combat several fraud issues such as monopoly power of government and information asymmetry. Transparency, accountability, and trust are the main issues. People need to understand the cycle process how to procure goods and services in government area. Lack of transparency and accountability create more opportunities for public official and vendors to break the rule for corruption purposes. Through e-procurement system, people understand the process and oversee procurement process to be free from fraud. Specific for the bidders, they want a transparency in bidding process, fairness of competition, fixed-price contract. E-procurement system provides electronically bidding process known all the bidders which mean selecting the bidding winner is known all the bidders. Therefore, the public official and vendors can not perform collusion in procurement.

H₁:E-procurement system is positively associated with fraud prevention of procurement.

2.3 Internal control and internal audit

Internal control can be described as policies and procedures established to provide reasonable assurance that the specific entity objectives will be achieved [14]. Internal control is expected to ensure integrity, accountability, and transparency in the procurement process. Internal control is commonly regarded as a key deterrent of fraud [15]. The effectiveness of internal control is always evaluated to ensure there is no hole or weakness that can emerge fraud behavior [16]. Internal control should be suitable and compliance with regulations and policies to combat fraud. In contrast, internal control weakness provides an opportunity to commit fraud [14].

The Association of Certified Fraud Examiners (ACFE) in their report found that a lack of internal control leads to fraud activities [17]. In this context, the government is mandated to create an internal control that reduces the opportunity in the procurement process. Today, the procurement process in Indonesia should be executed electronically under LKPP's

supervision. For the government, implementing e-procurement system help them to monitor and control the quality of the procurement process. For the suppliers, they can monitor bidding process online at anytime [4].

After the internal control works, Internal auditing should be held to ensure there is not an unusual behavior. The role of internal auditing is to review the effectiveness of internal control and to understand what the system works properly. Internal auditing has been used to help all government areas execute their responsibility effectively with gives the objective analysis, judgment, recommendation, and opinion associated with the works have been reviewed. Internal auditing helps the government to prevent, detect, and investigate fraud in the procurement process [18].

H₂: Internal control is positively associated with fraud prevention of procurement.

H₃: Internal auditing is positively associated with fraud prevention of procurement.

3 Research method

A quantitative approach is conducted in this research. This research explores the potential of e-procurement system, internal control, and internal auditing to reduce corruption in the procurement process. A survey is used for collecting data using a questionnaire that distributed to participants. To select the participants, a convenience sample design is adopted. The participants are the employees of Electronic Procurement Agency (LPSE) and Procurement Services Unit (ULP) at six districts in West Java, Indonesia. A total of 159 paper-based questionnaires were distributed, 100 returned and usable. The collected data were analyzed by the smartPLS.

3.1 Measurement

This measurement scale in this research uses six-point Likert scale ranging from 1= strongly disagree to 6= strongly agree to measure all the items. E-procurement variable is measured by 3 item questions [19], while each of internal control [20], [21] and internal auditing [22], [23] are measured by 4 item questions. Fraud prevention is measured by 5 items [24].

4 Results and discussion

4.1 The measurement model

The research model is tested through two steps: first, the validity and reliability of the measurement model; second, the structural model for testing the hypotheses. Validity requires average variance extracted (AVE) to be greater than 0.5 [25]. Reliability requires internal composite reliability (ICR) to be greater than 0.7 [3]. The result of measurement model is shown in Table 1 indicates that validity and reliability is met, which means all the variables are different from each other and reliable to use in this research.

Table 1. AVE and ICR

	AVE	ICR
EP	0.782	0.915
IC	0.644	0.879
IA	0.696	0.919
FP	0.609	0.885

4.2 The structural model and test of hypotheses

The bootstrap method is used to test the hypotheses. Table 2 shows the results of path coefficient and t-statistic. The critical t-value for two-tailed test is 1.96 (significance level = 10 percent) [3]. The results show that H_1 and H_3 are supported, while H_2 is not supported. The model research explains 31% of the fraud prevention, while 69% is explained by other variables.

Table 2. Path coefficient and t-value

Hypotheses	Path	Path coefficient	t-value
H_1	EP → FP	0.242	2.118
H_2	IC → FP	0.053	0.627
H_3	IA → FP	0.374	4.026

4.3 Discussion

This research finds the implementation of e-procurement system will prevent and reduce fraud or corruption in the procurement process. This result supports previous research by [3],[4]. However, internal control do not influence to fraud prevention of procurement. This finding is consistent with prior research by [14]. The research result also find that internal audit has a positive impact to fraud prevention. This result is in line with [18] study.

Looking at website infrastructure, the electronic procurement systems such as e-tendering, e-catalogue, and e-purchasing is ready at LKPP website (lkpp.go.id). These systems support all procurement process starts from tendering process until purchasing process conducted electronically. If these systems are consistently used, fraud in procurement can be decreased. The procurement process can be transparently established in bidding process such as selecting the winning bidder. However, classic problem in developing countries, infrastructure in information technology in government area has a gap between metropolitan and non-metropolitan city. Combating fraud through e-procurement system need a strong infrastructure. According to [29], procurement reform in Indonesia strong association with the geographical location and the wealth of a district. Therefore, many districts especially on non-metropolitan take partial implementation of e-procurement.

In addition, according to [4], decentralization policy has made procurement process less much transparent. Abusing power will slowly eliminate the transparency and accountability of e-procurement system. Essentially, e-procurement system should prevent and eradicate vertical and horizontal collusion. Vertical collusion is an official action that selects vendor because he or she has close relationship with the vendor. Public official abuses their power to appoint a vendor because their relationship with vendor. Other reason, public official may get personal benefit from vendor if vendor win the bidding process. Another collusion type namely horizontal collusion is committed among vendors by ignoring objective requirements and will be selected responsively to supply goods and services to government. The deal has been reached among vendors to decide who to be supplier in one government project.

According to [26], fraud still happens because of internal control weaknesses. Although the bidding processes are conducted electronically, the winning bidder has been selected in some cases for creating a benefit not only for individual but also organizational purposes.

The decentralization policy may not unsuitable for developing country such as Indonesia that has wide range of human resource capability. According to [4], In most of non-metropolitan area there is a problem at government's human resource that impede the implementation of e-procurement system in Indonesia. The civil servants have not ability to conduct procurement process through the technology. Indonesia government should aware that civil servant in government are getting "shock" because the changes of procurement process. To heal it, government creates a training program to improve civil servant's skill when faced with technology like e-procurement. In technology acceptance theory [28], training is an important influence to ensure an information technology can be operated by people. In this case, Bappenas with non-government institutions has held many training programs to introduce a new system and train civil servant how to use e-procurement system.

Although the government provide training program, the main challenge is the public official does not have intention or willingness to be a procurement official. It is reasonable if a civil servant rejects this position. First, to be procurement official, public official should pass a very complicated exam to achieve certification of procurement official. Hence, much public servant fail to pass the test and never be procurement official. It is will be very hard if e-procurement system applied without a competent user to operate it. Now, appointing procurement official does not consider their qualification and tend to be formality reason. Without a competent procurement official, procurement process risks to be abused and fraud committed. Second, procurement official position contains very high risk and pressure with low incentives. This is the main reason why civil servant does not want to be. Civil servant does not want to involve in fraud behavior. The temptation comes when vendors have no doubt to give money or privilege in order to influence procurement official to select their product. Then, if government official abusing their power to appoint a vendor as bidding winner, procurement official does not have choice and reason to reject it. It is why procurement official is not comfort position for civil servant. Actually, Indonesia government require a lot of procurement official to carry out e-procurement in the right track and fraud in procurement going down. Although e-procurement applied, with high risk and pressure for procurement official may difficult to prevent fraud in procurement process.

This research finds positively significant between internal auditing and fraud prevention. This finding is supported by the Regulation of Minister of Home Affairs No. 71 Year 2015 that should be applied to enhance the surveillance all of the province and local governments. The inspectorate has been mandated to supervise internal activities and speed up the good government governance. The Inspectorate's role should be maximized to monitor and control procurement activities in order to prevent the occurrence of fraud. The Inspectorate will complement the role of Bappenas for monitoring procurement process. In other words, the procurement process need to be audited by the internal body. In fact, internal audit does not prevent fraud procurement yet. It may be caused that internal audit focuses on big amount of procurement transaction.

5 Conclusion

The implementation of e-procurement process empirically will prevent and reduce the procurement fraud. But, the implementation of e-procurement in government areas is under questions. The fact shows the procurement fraud is still high, seems like this system is unemployed. Decentralization policy which to make a transparency procurement process is not good choice. It contains a big risk because of additional power of official province or local government to procure their own needs. Then, the decentralization emerges the

flexible interpretations among government level which makes e-procurement implementation is not effective. Central government need to rethinking its policy to decrease fraud with decentralization. Indonesia may need to bring back centralized procurement process with e-procurement system to complete the process. It is better than give the freedom to province and local government to anticipate power abuse.

Human resource in government area do not support to execute e-procurement system. It is not easy to appoint a competent user for this system. Higher risk, complicated certification exam, and uncomfot position make the procurement official position not interesting. It is becoming a challenge to get permanent officials in dealing with procurement [4]. Then, the most important is to increase integrity of procurement official to execute e-procurement process clear from fraud.

Internal control and internal auditing need to conduct in order to complete the prevention of fraud. The Minister of Home Affairs aware the importance of monitoring process in the province and local governments. Although applied in 2016, Regulation of Minister of Home Affairs No. 71 Year 2015 is the one step ahead to enhance monitoring and evaluating procurement process by the government.

5.1 Implication and future research suggestion

The result of this study has practical implications for the governments. E-procurement system should be implemented in order to prevent the occurrence of fraud. But, the government needs to ensure that the problems associated with implementation should be solved first such as human resources and infrastructure. One urgent point of the central government is to create legal regulation and official system to prevent multiple interpretations among the province and or local government. This research also suggests to enhancing monitoring process through internal control and auditing. This research future suggestion recommends the future research to investigate the acceptance of technology at province and or local Indonesian government. This is important to measure readiness of province and or local government to use technology like e-procurement. In Indonesia phenomena, the adoption of technology strong associated with geographical area and district characteristic.

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