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E-Procurement System Technology: An Analysis in Electronic Procurement Service Unit (LPSE) of Kepulauan Riau Province

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Abstract. *The practice of corruption always exist in public goods and service procurement in Indonesia. The Government efforts in reducing this case are doing new breakthrough like creating new system of service and goods procurement in an electronic way, usually called E-Procurement. After being instructed by Presidential Regulation number 54, year of 2010, the Local Government must use the E-Procurement System in the process of goods and service procurement, including Kepulauan Riau Province. This Research aims to analyzed the implementation of e-procurement system that had been adopted by Kepulauan Riau Province at year 2008. This research is not just for viewing the implementation of e-procurement system technically, but also to see how the influence of political process to the implementation of e-procurement. The Methodology used in this research is mix-method. This research are conducted in LPSE Kepulauan Riau Province, Procurement Service Unit (ULP) and also the vendors that supplies service and goods, that had been using the system. The results of this research are clearly stated that even the system of e-procurement of Kepulauan Riau Province are effective, and the political process is a factor which influencing the implementation of e-procurement.*

Keywords : *E-Procurement, E-Procurement Implementation, Political Process, Principal Influence, Agent Influence.*

1. Introduction

From many different sectors, governmental procurement is one field where corruption practices are enormously growing. According to a survey conducted by Indonesian Procurement Watch (IPW) which was presented to the Corruption Eradication Commission (KPK) in March 2011, it was found that 89% of companies that provide governmental goods and services had committed bidding bribes (Kredibel, 2011). Furthermore, 92% of those provider companies also admitted that they had tried to conduct bribery practices during the

bidding process (Kredibel, 2011). This survey involved 792 provider companies in Jakarta, Bekasi, Tangerang, Depok and Bogor as respondents and the result has been published on procurement magazine Kredibel 1st edition in 2011. The data shows that 80% out of 55,000 denunciations to KPK are cases related to procurement of goods and services (Kredibel, 2011). Meanwhile, Indonesian Corruption Watch (ICW) reports that 43 cases of procurements indicated with corruption are cases where direct appointment usually takes place (Purwanto, Ibtu, Rofikah, Indroyono, 2008).

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Moreover, ICW also reports that there are other corruption practices within procurement process which include 48 cases of mark-up, 50 cases of black-mail, 1 case of contract abuse and 8 cases of fake project (Purwanto, Ibtu, Rofikah, Indroyono, 2008). The policy of the government in trying to cut out corruption practices in the procurement of goods and services in Indonesia evidenced by the issuance of Presidential Decree No. 54 of 2010 which implies that the implementation of the electronic auction, or so-called e-procurement must become a liability that should begin in 2012.

In other words, the expectation to the adoption of electronic procurement is diminishing corruption in the procurement sector, this was due to have reduced the intensity of the providers of goods and services face to face and lobbying procurement management because all steps in electronic procurement using the process in internet. So, the providers good and services can't bribes the procurement management. One of Local Government is Kepulauan Riau province also perform all adopt the e-procurement system. Kepulauan Riau Province through the Electronic Procurement Service Unit (LPSE) has started to implement e-procurement in the procurement process.

However, the adoption of e-procurement, Kepulauan Riau Province is not without problems, there are some challenges and obstacles that must be faced by the Government of Kepulauan Riau Province. Purwanto, Ibtu, Rofikah, and Indroyono (2008) have an inventory of some of the challenges and obstacles that will be faced by the Provincial Government of Kepulauan Riau Province, is the first, the challenges associated with environmental factors, where the Kepulauan Riau Province has geographical side has more or less 2,448 islands and not all regions have the infrastructure adequate as in Natuna Island that have not connected to the Internet as an essential prerequisite in e-procurement. Secondly, the issue of limited electrical power is feared to disrupt the auction process

because each day on average state power company (PLN) outages the electricity around 3-6 hours on a rotation. Third, another issue that is related to the limitation of human resource management LPSE and there are still some organizers and vendors are not familiar with the e-procurement, and there is still a misperception among bureaucrats who think that once there is no longer a role LPSE procurement committee. In addition the other challenge is how the commitment of all stakeholders be it the Provincial Government, Provincial Parliament (DPRD) of Kepulauan Riau Province, local officials and public in the implementation of e-procurement in Kepulauan Riau Province.

2. Literature study

2.1. Concept of the E-Procurement

E-procurement is the development of the concept of e-government, e-government which according to UNDP (Sugandi, 2011,) that the E-Gov itself is, use of information technology movement information due to physical limitations such as paper and physical based systems has traditionally been through the use of technology continues to constantly to access and submit to government services used by citizens. In general, E-Procurement by Muhtar (2011) is a procurement services electronically where the system is trying to set up business transactions through a computer and procurement process is done online.

The benefits of e-procurement by Palmer (Nightisabha, Suhardjanto, Cahya, 2009) is the achievement of a good collaboration between buyers and suppliers, reduce power usage field, improve coordination, reduce transaction costs and procurement cycles, lower inventory levels and a good transparency. Meanwhile, according to Hardjowijono (Nightisabha, Suhardjanto, Cahya, 2009) that the benefits of the implementation of e-procurement is as a tool in creating a government free from corruption and nepotism as the major benefits of e-procurement, and as for the direct benefits expected from the

implementation of the system this new process is shorter, especially in terms of time and bureaucracy and cost savings in the procurement process.

2.2. Concept of the Implementation of E-Procurement System

The implementation of e-procurement system is an interconnected process of which Thai (2001), Nurmandi (2013), Setyadiharja, Muzwardi and Kholid (Nurmandi and Sataporn, 2014) describes that “e-procurement system is a system that has five components is its implementation. These five components are policy making and management, regulation, distribution of authority, implementation of public e-procurement and feedbacks”. Then Thai (2001), Nurmandi (2013), Setyadiharja, Muzwardi and Kholid (Nurmandi and Sataporn, 2014) explains that “the relationship of the five components as follows, where the procurement regulations (box.2) issued by policy makers and

procurement management (box.1) which later became the organizer of the institutional framework of e-procurement professional (that is official contract makers, buyers, and procurement committee) and also the program manager (box.4) who carry out their authority and also the fulfillment of program and project procurement (box.3), and accountability given to policy makers and procurement management (box.1). he relationship between the four elements or boxes connected by arrows. Finally, the feedback will refer to policy makers and procurement management as a positive assessment and the increase in implementing regulations, authorization and appropriation, but it also leads to the organizing committee as well as the procurement and the assessment and improvement of operational procurement”. Thai (2001), Nurmandi (2013), Setyadiharja, Muzwardi and Kholid (Nurmandi and Sataporn, 2014) then summed in the following figure.

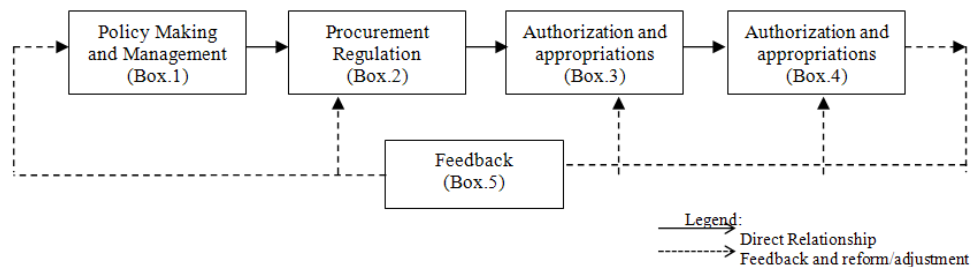


Figure 1. E-Procurement System

Then Thai (2001) explain the process of implementing e-procurement system in more detail as follows:

1. Policy Making and Management (Box.1)

In a democratic system there is always a relationship of power between the legislative, executive, and judiciary, in which the implementation of the accountability procurement under these three agencies (Thai, 2001). Procurement organizational structure and accountability accountable to the executive orders (Thai, 2001). While the legislative, acting as affecting the e-procurement system to make law (published procurement policies and regulations) (Thai, 2001).

Furthermore, Thai (2001) and Nurmandi (2013) explained that the implementation of e-procurement policies, executive headed by the central government, provincial government, and municipalities government, made a number of managerial and technical procurement accountability and determining procurement policies as follows:

- Supplementing and augmenting statutory procurement policies and procedures through executive orders;
- Developing and maintaining statutory procurement policies and procedures; and
- Determining whether to meet program needs by in-house performance or by contracting out.

In principle, the executive responsible for the implementation of the procurement and delivery of procurement authority and also the appropriation of the procurement process. Where Thai (2001) explains that "the executive branch also publishes procurement policy and procurement procedures on his orders". In addition the executive also made political and management decisions related procurement program and appointment of the chairman of organizing procurement and other officials either directly or indirectly engaged in the procurement process and managerial as well as a procurement organization structure.

2. Procurement Regulation (Box:2)

The next thing that needs to be done in the implementation of e-procurement process is creating the procurement regulations. Where Thai (2001) said "the e-procurement system should focus on integrity and transparency". Furthermore, Thai (2001) and Nurmandi (2013) explains that the regulation of the procurement of goods / services is required to;

- Procurement organizational structure, roles and responsibilities;
- Procurement phases and process; and
- Standards of conduct.

An e-procurement system is a fairly complex system where there are many conflicts of interest and the procurement regulation is "in order to increase the trust in order to obey the procedures that have been designed in the e-procurement system" (Thai, 2001).

3. Authorization and Appropriation (Box 3)

Thai (2001) describes "the implementation of e-procurement authorization and appropriation integrated into the system of e-procurement and determines e-procurement process". Thai (2001) explains that actually, procurement professionals can provide policy makers with valuable information in the pre-procurement cycle phases, including needs assessment, and procurement program authorization and appropriations. In practice, they have been key players in early phases of procurement, including their participation in privatization, outsourcing or "make or buy" decisions. Moreover, as mentioned later,

public procurement professionals, through their experience with the procurement regulation system, become a major source of feedback for procurement adjustment, improvement, or reform. This is the essence of authorization, where Thai (2001) means that policy makers to delegate powers to the organizers procurement process including providing information, assessment and fulfillment facilities and infrastructures are needed, then the organizers are conducting procurement process with reference to the regulations that have been designed and the process goes well will determine the feedback on the procurement process.

4. E-Procurement Function in Operations (Box:4)

In the process of implementation of e-procurement is talking about the operation, where Thai (2001) explained that in the process of operationalization of e-procurement function requires the following:

- Manager and procurement personnel,
- Organizational structure,
- Techniques and methods and process.

5. Feedback (Box:5)

Thai (2001) explain that the feedback element is very important for a sound procurement system. By continuously evaluating what is required to perform the whole procurement system, what happens to it and what results from it, policy makers and management can make required adjustments or reforms where they are needed. Thai (2001) then explain that feedback may indicate the need for adjustments to or improvements in all procurement system elements. In some cases, feedback may indicate that procurement regulations or policies and/or agency procurement standards are no longer current or suitable, and adjustments or reforms are needed. In other cases, feedback may prove that the procurement cycle does not work effectively, and needs to be improved in areas such as prompt payments, uses of new technology such as e-procurement and purchase cards. The fifth element of the implementation of e-procurement system above that is policy making and management, procurement

regulations, authorization and appropriations, E-procurement function in operations and feedback can be assessed by a framework of analysis to see how the e-procurement system is actually executed. Analytical framework to

see how the implementation of e-procurement system as described by Song, Shin (2010), Setyadiharja, Muzwardi and Kholid (Nurmandi and Sataporn, 2014) in the following table.

Table 1. Framework Analysis of E-Procurement System Implementation

Factor	Question	Elemental Analysis
Environment	Where	Political, economic, social, technological situations Leadership and social awareness Lead/partner organizations, and regulatory support allocation of resources: finance, manpower, technology
Leadership and institutional	Who and how	Perceived benefits in using the system(s) Perceived problems in using the system(s) Supporting integrity Supporting transparency Legislative support for system
Vision and Objectives	Why	Vision Policy goals System type System functionality System description System architecture
Prioritization/ functionality	What and where	System communication standards Security technologies and document transfers Authentication System performance, availability and reliability Interfacing with other systems System capability monitoring and Audits Business Issues Overview of strategy applied Specific implementation strategy subcomponents
Performance	Result	Procurement outcomes achieved national informatization index UNDESA & ITU index

Source: Song and Shin, www.kapa21.or.kr/data and Curtin University of Technology and Setyadibarja, Muzwardi, Kholid (Nurmandi and Sataporn, 2014)

2.3. Concept of Political Process in Implementation E-Procurement System

Influence the political process also affects the implementation of e-procurement. As Thai (2001) explained that the implementation of e-procurement is influenced by several environment such as Internal Environment, Market Environment, Political Environment, Legal Environment, and Social, Environment Economic and others. Talking about the

political environment in the implementation of e-procurement Thai (2001) and Nurmandi (2013) explains that, in a democracy many individuals, groups, and private organizations including trade associations, professional associations, and business enterprises or companies (commonly known as interest groups) are actively involved in public procurement system (public Procurement) who has a variety of interests, goals and

beliefs, interest groups involved in the public procurement system (public procurement) has some political way in influencing the procurement process such as lobbying the legislature for designing or amending procurement legislation, affecting the implementation of the regulation, and affect the budget authorization and appropriations process. Furthermore, Thai (2001) and Nurmandi (2013) says that, to minimize the political process distorted, then there needs to be a compromise between the government (legislative and executive), interest groups

and procurement management (bureaucracy) is to create a system that appropriate and optimal in the procurement process". Here will be analyzed how the pattern of decision-making that will be taken by either e-procurement management in implementing e-procurement or also the executive as a whole protector and responsible in the implementation of e-procurement. Thai (2001) and Nurmandi (2013) later explained triangular political relationship in e-procurement, as shown in the following figure.

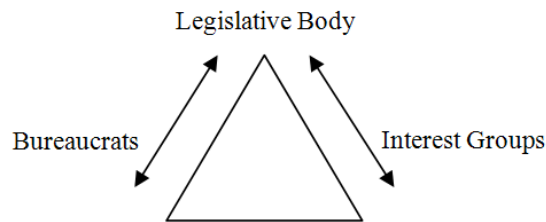


Figure 2. The Politics of Procurement: An Iron Triangle Relationship

With a pattern of relationships that affect each other and have close bonds between the actors, the pattern of decision-making that should be done is described by Islamy (2009) that the pattern of decision-making by the Institutional Model, where Dye (Islamy, 2009) explains that in this decision-making model of "government agencies that give effect to the policy means that the policy is seen as a legal obligation that must be adhered to by all stakeholders".

"Regulations are designed with strong and deep commitment to an e-procurement system is to minimize the unwanted policy discretion and outside the boundaries of risk" (Schapper, 2006, Nurmandi, 2013). While Udoyono (2010) says that "with the the regulations makes the implementation of e-procurement has the force of law". According Thai (2001) that "there is a process of compromise between the executive and the legislature (government), interest groups and procurement management". At this stage the pattern of decision-making is done by "lobbying (lobbying) to create a working relationship (cooperation) solutional against a policy"

(Start and Hovland, 2004). Moon (Thai, 2009) said that, the working relationship between the procurement management and the some of government agencies is substantial in terms of managerial e-procurement, in which when the procurement management adhere to the policy that has been designed, it will be easier for the government to initiate the innovation of e-procurement".

The political process and political relations in the triangle described above, is indeed a relationship between a principal-agent, where in principal-agent theory describes the relationship of the stakeholders' in the implementation of e-procurement (Yukins, 2010). Principal according to Forrester (Khan and Hildreth, 2002) is who allocate government resources and the agent is who is entrusted with the government sources, further Forrester (Khan and Hildreth, 2002) explains that in this relationship, principal has an agreement with the agent to serve the public. In the implementation of e-procurement according Yukins (2010) explains that "Congress (legislative) and executive usually called the principal, because

it is they who provide procurement sources. While e-procurement management and providers of goods and services is called the agent, as they are handed over procurement sources and obligation to serve the public. With the principal-agent approach can be understanding the causes and consequences of which the principal must select and monitor the agent of authority that has been delegated (Che, 2007). Furthermore, Che (2007) explains that, "the concept of a principal-agent contains three concepts namely delegation, selection and monitoring". Among the relationships between the principal and agent are common dysfunction. Principal and agent relationship dysfunction according Zheng (2008) is as follows:

- Asymmetric information

- Incomplete contracts
- Opportunism in the supervision of consignors

As a solution to the dysfunction of the Zheng (2008) creates a solution to a principal-agent relationship between running properly is as follows:

- Executing the government procurement laws strictly
- Building effective accountability mechanism
- Building perfect supervision mechanism

If the principal-agent relationship in the implementation of e-procurement goes well, there will be a process of checks and balances that is optimal among the agencies involved. As illustrated by the Thai (2001) the following:

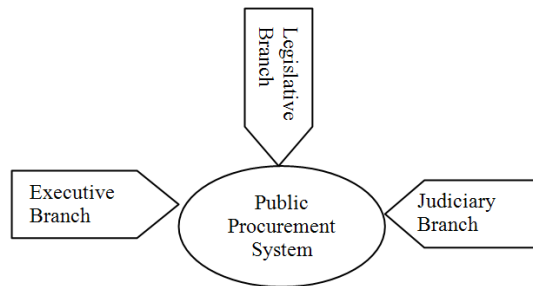


Figure 3. Public Procurement System: A Check and Balance Power

Thai (2001) explains "that the the management procurement or procurement committee to implement e-procurement under the rules overseen by the three branches of power, namely the executive, legislative, and judicial branches." In the process of checks and balances in which the institutions involved have their respective roles as described by Robinson (Thai, 2009) that executive is responsible for the implementation and conduct authorization and appropriations in the process of e-procurement. The legislature give effect and control of e-procurement system through regulation, budget compliance, and also controlling the power, and the role of the judiciary as an institution of the investigation and testing of all issues related to law and the rules involved in the e-procurement process, including monitoring the regulations and contracts".

3. Research Methodology

This type of research is to use a mixed methods is by combining quantitative methods with the qualitative methods. The quantitative research approach used in this study is to survey methods. The explanation of this research approach is to use a descriptive study. Where the results of the quantification results of the survey are described descriptively. In the first phase of this research will be done by doing research with the quantitative survey approach. On data processing, the first step of this research is tested the validity and reliability, secondly, analyzed of the effectiveness index of implementation of e-procurement in the Kepulauan Riau (Table.7) by finding the average of the total respondents questions per indicator. Respondents' answers is determined from Likert scale the following code:

Table 2. Effectiveness Index Score

Effectiveness Index Score	Category
1,00 – 1,75	Not Effective
1,76 – 2,50	Less Effective
2,51 – 3,25	Effective
3,26 – 4,00	Very Effective

Source: *Primary Data: 2013*

The third step, analyzed of the relationship between variables implementation of e-procurement and variable of political process, by using product moment formula (Table.8), the fourth step is find out variable of political process influence to the variable implementation of e-procurement with using inversion matrix (Table.9). Then after the quantitative data collection is completed, the next stage is to conduct research with the qualitative methods. The study was conducted on Electronic Procurement Service Unit (LPSE) of Kepulauan Riau Province, Procurement Services Unit (ULP) of Kepulauan Riau Province, Provincial Parliament (DPRD) of Kepulauan Riau Province, and Development Administration Bureau of the Regional Secretariat of Kepulauan Riau Province, and also the provider of goods/services.

4. Result and Discussion

4.1. Description of Implementation of E-Procurement System in LPSE Kepulauan Riau Province

4.1.1. Policy Making and Managerial

In the Kepulauan Riau Province policy makers in the hands Regional Government and DPRD Kepulauan Riau Province. Kepulauan Riau Province Local Government Policy adopting e-procurement system based on spirit of local governments to reach a clean, transparent, and accountable to achieve the good governance. Adoption of e-procurement system conducted by the Provincial Government in order to reduce indications of irregularities and corrupt practices in the procurement process. Support for e-procurement system in the province of Kepulauan Riau Province is very strong, especially by the DPRD Kepulauan Riau province, even in 2014 the Procurement Services Unit (ULP) which is part of the

implementation of e-procurement will be upgraded to Procurement Services Agency (BLP). Provincial Government of Kepulauan Riau Province is not a half-hearted run and continue the policy of the Central Government related to the Electronic Procurement System (SPSE), the evidence to establish institutions that will support the implementation of e-procurement systems such as establish Electronic Procurement Service Unit (LPSE) then establish the Procurement Services Unit (ULP) and in 2014, institutional ULP will be upgraded to Procurement Services Agency (BLP).

Support for policy adoption of e-procurement system is getting stronger, not only supported by the Parliament and the Provincial Government of Kepulauan Riau Province as policy makers, but also supported by the bureaucracy under it. Currently, all on education are required to procure goods and services with e-procurement system except for the procurement of goods and services below the value that should be openly tendered, then still use the direct appointment system, but for the value that has been set in the rules must be tendered in open should use the e-procurement system. The whole on education should present the General Procurement Plan (RUP) through the LPSE website to do the announcement open auction and open auction process conducted in accordance with LPSE's procedures. All support the policy spawned several policies that later became the foundation in carrying out e-procurement system in Kepulauan Riau Province. The policy, among others, the Governor Regulation No.5 of 2008 on the Guidelines for Government Electronic Procurement of Goods and Services within the Kepulauan Riau Province, the

Memorandum of Understanding between the Institution of Procurement Goods/Services (LKPP) with Governor of Kepulauan Riau No.03/MOU/VII/2008 on Cooperation Implementation SPSE the National Procurement process and the decision of the Governor of Kepulauan Riau No.2 of 2012 on the Working Group Unit Electronic Procurement Service (LPSE) Kepulauan Riau Province.

4.1.2. Procurement Regulation

There are several regulations issued by the Government of Kepulauan Riau Province is

- Governor Regulation No.5 of 2008 on the Guidelines for Government Electronic Procurement of Goods and Services in the Kepulauan Riau Province, this is the first regulations set by the Government of Kepulauan Riau Province underlying its adoption in e-procurement system in Kepulauan Riau Province.
- Memorandum of Understanding between the Institution of Procurement Goods/Services (LKPP) with Governor of Kepulauan Riau No.03/MOU/VII/2008 on Cooperation in the Implementation of the National SPSE Procurement Process. This regulation contains matters related to the basic implementation of e-procurement system to be implemented by the Provincial Government of Kepulauan Riau as a follow-up of central government policy on e-procurement

run by LKPP, this regulation also stipulates responsibilities LKPP and related Kepulauan Riau Provincial Government related implementation of e-procurement system. This Regulation also regulates the stages of implementation of e-procurement to be executed by the Government of Kepulauan Riau Province.

- Kepulauan Riau Governor Decree No.2 of 2012 on the Working Group on Electronic Procurement Services Unit (LPSE) Kepulauan Riau Province. This Regulation contains the structure and the main duties and functions of the unit LPSE Kepulauan Riau Province in running e-procurement system in Kepulauan Riau Province. This regulation is to clarify the responsibility of each structure in the technical running of e-procurement system in Kepulauan Riau Province.

4.1.3. Authorization and Appropriation

In Kepulauan Riau Governor Decree No.2 of 2012 has been clear that the technical implementation of e-procurement system submitted to the unit of LPSE. LPSE Kepulauan Riau Province unit has been operating since July 7, 2008 and was officially opened before the public on September 16, 2008. Since then several LPSE was inaugurated the System Provider established as indicated in the following table.

Table 3. LPSE System Provider Standing in Kepulauan Riau Province

No	Name of LPSE	Website	Date of Implementation
1	LPSE Kepulauan Riau Province	http://lpse.kepriprov.gi.id	July 7th 2008
2	LPSE Batam	http://lpse.batamkota.go.id	August 15th 2011
3	LPSE Anambas	http://lpse.anambaskab.go.id	January 20th 2012
4	LPSE Natuna	http://lpse natuna.net	January 26th 2012

Sources: Reports First Quarter (January-March) Implementation of E-Procurement LPSE Kepulauan Riau Province in 2012

Besides LPSE System Provider that has been established within the framework of the process of devolution of procurement of goods and services in the Provincial

Government of Kepulauan Riau Province, also established LPSE Service Provider. This serves LPSE Service Provider to manage servers that have been installed SPSE in

LPSE its parent (System Provider). LPSE this type will have its on LPSE nearby so it does not have its own web address yet another

LPSE function. There are 4 (four) LPSE in District / City LPSE have its in Kepulauan Riau Province is:

Table 4. LPSE Service Provider in Kepulauan Riau Province

No	Name of LPSE	Date of Implementation
1	LPSE Kabupaten Karimun	March 11th 2010
2	LPSE Kota Tanjungpinang	May 6th 2011
3	LPSE Kabupaten Lingga	The end of year 2011
4	LPSE Kabupaten Bintan	January 2012

Sources: Reports First Quarter (January-March) Implementation of E-Procurement LPSE Kepulauan Riau Province in 2012

After the establishment of multiple service providers above, the process of fulfilling the needs of the facility to the next is given LPSE Kepulauan Riau province consisting of:

- Space submission services (Bidding Room), training, and verification,
- Internet access and Internet users SPSE who visit the locations LPSE,
- Consulting services SPSE users via the Internet, telephone and site visits LPSE,
- Announcements and information to the user if the SPSE are facing technical problems that can inhibit the activity of users SPSE.

In addition the data based E-Procurement Implementation Report LPSE Kepulauan Riau Province First Quarter (January-March) of 2012, LPSE Kepulauan Riau Province has six bidding room which is a room that can be used by the provider to the online

registration process that came to LPSE Kepulauan Riau Province during the period LPSE work the same time working in the Office of the Provincial Government of Kepulauan Riau Province. Based on data from the E-Procurement Implementation Report LPSE Kepulauan Riau Province First Quarter (January-March) of 2012, LPSE Kepulauan Riau Province has internet access using Telkom Speedy with 2 Mbps bandwidth and internet access in the room LPSE servers located in the Bureau of Development Administration menggunakan Astinet Telkom to save a Bandwidth 5 Mbps fiber optic. Besides infrastructure facilities, the Government of Riau Province is also the process of fulfilling the requirements related to the development of human resources by providing training services as follows:

Table 5. Amount and Time LPSE Training organized by the Kepulauan Riau Province in 2012

No	Target Training	Time	Total
1	Employee LPSE	First Quarter (January-March) of 2012	17
2	Procurement Unit	First Quarter (January-March) of 2012	1
3	Providers of Goods and Services	First Quarter (January-March) of 2012	3
		Second Quarter (April-May) of 2012	2
4	Procurement Committee in UMRAH	Second Quarter (April-May) of 2012	1

Sources: Report on Implementation of E-Procurement LPSE Kepulauan Riau Province First Quarter (January-March) and II (April-June): 2012

4.1.4. E-Procurement Function in Operations

Talking about the operationalization of e-procurement function is related to the procurement process undertaken LPSE

Kepulauan Riau Province. Since the implementation of the realization of Goods / Services Electronic on LPSE Kepulauan Riau Province as described in the following table.

Table 6. Realization of the Procurement of Goods / Services Electronic (E-Procurement) in 2008-2012

Year	Expenditure Goods and Service	Capital Expenditure	Total	E-Procurement Persentation (%)	Package Auction	Budget Ceiling Amount (Rp)	Efficiency (%)
2008	432.582.586.244	444.961.517.279	877.544.103.523	0,02	1	135.000.000	3,2
2009	340.085.000.000	192.919.000.000	533.004.000.000	3,88	45	20.683.000.000	8,16
2010	368.136.269.373	657.183.872.317	1.025.320.141.690	25,43	246	260.748.000.000	15,15
2011	686.032.380.539	259.907.863.027	945.940.243.566	67,86	611	641.912.000.000	11,69
2012	848.770.000.000	329.780.000.000	1.178.550.000.000	44,13	608	520.057.244.333	12,19

Source: Processed Secondary Data: 2013

4.2. Effectiveness Index of Implementation of E-Procurement System in LPSE Kepulauan Riau Province

According to Song, Shin (2010), Setyadiharja, Muzwardi and Kholid (Nurmandi and Sataporn, 2014) there are several factors that affect the implementation of e-procurement system, factors that affect it are:

- Leadership and the Institution where the parameter is the clarity of e-procurement planning, regulation, and human resources support.
- Objectives, where the parameters are

clear objectives in the policy / regulation of e-procurement.

- Functionality where the parameter is the support infrastructure system and network as well as the type of system website.
- Performance parameters which are efficiency and effectiveness.

Then measurement was followed by measuring the effectiveness of the index value of each parameter and generates the data as follows.

Table 7. List of Parameter Effectiveness Index Level Up Ascending Descending

No	Parameter	Index Value
1	Clear Objective and Goals	3,33
2	Type of System Website	3,33
3	Regulations	3,31
4	Clarity Of Information Planning	3,28
5	Human Resources	3,27
6	Efficiency and Effectiveness	3,25
7	Infrastructures and Networks	3,11
Total Index		3,27
Category Index Value Implementation of E-Procurement System		Very Effective

Sources: Primary Data Processed: 2013

Of all the parameters, then to determine the effectiveness of the implementation of e-procurement system in LPSE Kepulauan Riau Province then use the following formula:

$$(3,28 \times 0,14) + (3,31 \times 0,14) + (3,27 \times 0,14) + (3,33 \times 0,14) + (3,11 \times 0,14) + (3,33 \times 0,14) + (3,25 \times 0,14) = \mathbf{3,27}$$

Value of 0,14 obtained from the division of the number of parameters in this study are 1/7 then generated 0,14. Based on calculations by the above formula, the obtained results of 3,27. Based on the effectiveness index score on Table.2, value of the 3,27 figure into the category very effective. It is thus the implementation of e-

procurement system in Kepulauan Riau Province LPSE very effective.

4.3. The Influences of Political Process against to Implementation of E-Procurement System on LPSE Kepulauan Riau Province

4.3.1. Data Analysis Influences of Political Process against to Implementation of E-Procurement System on LPSE Kepulauan Riau Province

To measure how the influence of political process towards the implementation of e-procurement, is used Coefficient Correlation Product Moment Test and Path Analysis. The Coefficient Correlation Product Moment Test result as follows.

Table 8. Coefficient Correlation Variable Politic Process Against to Implementation of E-Procurement System

Variable		X1	X2	X3	X4	X5	X6	Y
X1	Pearson Correlation	1	.555**	.499**	.640**	.559**	.606**	.451*
	Sig. (2-tailed)		,001	,005	,000	,001	,000	,012
	N	30	30	30	30	30	30	30
X2	Pearson Correlation	.555**	1	,204	.561**	.463*	.468**	.367*
	Sig. (2-tailed)	,001		,279	,001	,010	,009	,046
	N	30	30	30	30	30	30	30
X3	Pearson Correlation	.499**	,204	1	.650**	.584**	.676**	.401*
	Sig. (2-tailed)	,005	,279		,000	,001	,000	,028
	N	30	30	30	30	30	30	30
X4	Pearson Correlation	.640**	.561**	.650**	1	.777**	.619**	.434*
	Sig. (2-tailed)	,000	,001	,000		,000	,000	,017
	N	30	30	30	30	30	30	30
X5	Pearson Correlation	.559**	.463*	.584**	.777**	1	.467**	,294
	Sig. (2-tailed)	,001	,010	,001	,000		,009	,114
	N	30	30	30	30	30	30	30
X6	Pearson Correlation	.606**	.468**	.676**	.619**	.467**	1	.497**
	Sig. (2-tailed)	,000	,009	,000	,000	,009		,005
	N	30	30	30	30	30	30	30
Y	Pearson Correlation	.451*	.367*	.401*	.434*	,294	.497**	1
	Sig. (2-tailed)	,012	,046	,028	,017	,114	,005	
	N	30	30	30	30	30	30	30

Source: Primary Data Processed: 2013

According to the coefficient correlation product moment data above, then the next step is decide the variable coefficient correlation inversion matrix against to politic

process and implementation of e-procurement system. After doing the measurement then obtainable result as follows.

Table 9. Inversion Matrix

VARIABLE	X1	X2	X3	X4	X5	X6
X1	2,118791	-0,53177	-0,14997	-0,39552	-0,28337	-0,55658
X2	-0,53177	1,95759	0,956934	-0,78305	-0,26401	-0,63278
X3	-0,14997	0,956934	2,758102	-0,88559	-0,64002	-1,37436
X4	-0,39552	-0,78305	-0,88559	3,798274	-1,6819	-0,36087
X5	-0,28337	-0,26401	-0,64002	-1,6819	2,730631	0,493822
X6	-0,55658	-0,63278	-1,37436	-0,36087	0,493822	2,555262

Source: Primary Data Processed: 2013

The next step is decide the direction of path coefficient with doing multiplication manner between transpose of matrix value with variable correlation matrix political process and implementation e-procurement system, and then obtainable the result as follows.

- Magnitude the path coefficient between X1 and Y = 0,1687 or 16,87%. This is means how magnitude the impact of relative between principal's clarity of information parameter against to implementation of e-procurement system is entry into strong enough category.
- Magnitude the path coefficient between X2 and Y = 0,1304 or 13,04%. This is means how magnitude the impact of relative between principal's contract mechanism parameter against to implementation of e-procurement system is entry into medium category.
- Magnitude the path coefficient between X3 and Y = 0,1340 or 13,40%. This is means how magnitude the impact of relative between principal's opportunistic behavior paramater against to implementation of e-procurement system is entry into medium category.
- Magnitude the path coefficient between X4 and Y = 0,1537 or 15,37%. This is means how magnitude the impact of relative between agent's clarity of information paramater against to implementation of e-procurement system is entry into strong enough category.

- Magnitude the path coefficient between X5 and Y = -0,1630 or -16,30%. This is means how magnitude the impact of relative between agent's contract mechanism parameter against to implementation of e-procurement system is entry into strong enough category but had negative signify and that means more strong the negative number then against will more negative.
- Magnitude the path coefficient between X6 and Y = 0,2242 atau 22,42%. This is means how magnitude the impact of relative between agent's opportunistic behavior paramater against to implementation of e-procurement system is entry into strong category.

From the calculating above, then magnitude the value of impact from all of whole parameter from politic process variable against to implementation e-procurement system had obtain value are 0,9740 which includes into very solid category. As for the impact of variable out of politic process variable mentioned be calculated based on formula as follows.

$$\begin{aligned} \epsilon &= (1 - R^2) \\ &= (1 - 0,9740) \\ &= 0,0260 \end{aligned}$$

According to the calculating above, then it showed that there another variable which has not been inspected in this research guess was impact implementation of e-procurement system besides political process.

5. Conclusion

Implementation of e-procurement system on LPSE Kepulauan Riau Province already worked with very effective based on this research result then the index effectiveness level implementation of e-procurement system get value 3,27. It shows that in terms of planning, objectives, regulatory, human resources, infrastructure capable of supporting factors for effectiveness of implementation e-procurement in Kepulauan Riau Province. The influences of politic process against to implementation of e-procurement system was be affected strongly. Total value of politic process impact against to implementation of e-procurement system is as big as 0,9740 or 97,40% and as big as 0,0260 or 2,60% impacted by another variable. Further conclusioning that politic process had very strong impact against to implementation of e-procurement system on LPSE Kepulauan Riau Province.

Thus, to create an e-procurement implementation effectively be followed by a strong political will, in order to support the implementation of e-procurement systems are then able to reduce corruption and improve quality in the procurement of goods and services. Political process also determine the passage of regulations that have been created, in order to avoid irregularities in the implementation of e-procurement system. Besides that the political process also determines the availability of resources for the implementation of e-procurement systems both human resources also budgetary resources and infrastructure, where the policy, the budget for e-procurement can be provided for the fulfillment of facilities and infrastructures as well as human resources.

Therefore, the recommendation to other research with titles like this, should also analyze the factors beyond the implementation of the system, because of other factors such as political, economic, social and cultural well determine the optimal implementation of this e-procurement system.

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