



IMPLEMENTATION E-REVERSE AUCTION ON PUBLIC PROCUREMENT IN DKI JAKARTA GOVERNANCE

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Article history:	Abstract:
<p>Received: 23st September 2022 Accepted: 25st September 2022 Published: 30st September 2022</p>	<p>This study aims to determine the effectiveness and efficiency of the implementation and use of E-Reverse Auction in the Procurement of Goods/Services, especially in the process of selecting providers at the DKI Jakarta Provincial Goods/Services Procurement Agency in 2019 and 2020. In addition, to find out the understanding of procurement actors goods/services, to find out the most appropriate type of procurement using the E-Reverse Auction method, and to find out the factors of obstacles/constraints as well as alternative solutions in the use of E-Reverse Auction.</p> <p>From the results of this study, it can be seen that the level of effectiveness and efficiency of the use of E-Reverse Auction. The most appropriate procurement utilizing E-Reverse Auction is the procurement of goods according to the Karljic matrix located in quadrant IV (leverage) or quadrant III (routine). Other types of procurement can also be applied with a maximum of 20 types of items. While the inhibiting factor or obstacle that is often faced is the offer price is too low and if the E-Reverse Auction time is more than 60 minutes the provider tends to re-offer more than twice without recalculation. It is hoped that these constraints can be accommodated in the SPSE so that the lowest bid price is locked at around 80% of the HPS and the e-reverse auction execution time is between 16 – 45 minutes. The novelties in this research are (1) The implementation of the e-reverse auction increases the effectiveness and efficiency in terms of time and cost, (2) The implementation of the procurement of goods and services can be more optimal with the application of the e-reverse auction, (3) The implementation of the e-reverse auction can be carried out in all types of procurement with no more than 20 (twenty) work items, also for the procurement of simple and uncomplicated construction works, (4) Integrating e-reverse auction with direct procurement (E-Order) through the SIERA-ORDER application.</p>

Keywords: Effectiveness, Efficiency, E-Reverse Auction, Procurement Actors goods/services, SPSE.

INTRODUCTION

Procurement Goods /Services are activity the main and important routine for Ministries/Institutions/ Regional Apparatuses in To do service to Public with effective and efficient as well as appropriate time . The one that became obstacle in procurement goods / services is a lot fail auction caused various reason . Existence fail auction often result in service to Public delayed or no maximum because implementation activity delayed consequence time implementation limited or even canceled by User Budget because time implementation no enough for doing activity .

Those who intend hinder and hinder implementation implementation budget development still can To do efforts for thwart the tender with no participate in the procurement process goods / services or To do intentional error . If it happens failed tender / failed auction and not existence participating participants in procurement goods / services , then the procurement process must is repeated from beginning again . This thing waste cost , time , and resources power human (HR) who process procurement goods / services also become benchmark measuring evaluation performance from organization procurement goods / services .

For reduce fail auction and not existence participation participant in procurement goods / services , then in Regulation President Number 16 of 2018 concerning Procurement Government Goods /Services introduced innovation new that is Electronic Reverse Auction (E-Reverse Auction) with the definition in article 1 Number 42 is method offer price by repeated.

Search results via technology information by random related implementation E-Reverse Auction in Indonesia is not many found . Rules related implementation e-reverse auction besides Regulation President number 16 of 2018 about Procurement Government Goods /Services Article 1 number 42 and article 50 paragraph 11. More details are explained in

LKPP regulation number 9 of 2018 concerning Guidelines Implementation Election Through The provider in the attachment . Also explained by technical with Minister of Public Works and Public Housing Regulation number 7 of 2019 concerning Construction Service Standards and Guidelines through Changed provider through PUPR Ministerial Regulation number 14 of 2020, where e-reverse auction deleted for procurement service construction and work construction .

During period time In 2019 and 2020 data were obtained from BPPBJ DKI Jakarta Province for level failed tender and implementation of E-Reverse Auction in Table 1 as following :

Table 1. Recapitulation Procurement Goods /Services in DKI Jakarta Province

No	Type Procurement	2019 _				2020 _			
		Amount Package	Amount Package Tender Fail	E-Reverse Auction (Package)	E-Reverse Auction (%)	Amount Package	Amount Package Tender Fail	E-Reverse Auction (Package)	E-Reverse Auction (%)
1	Goods	713	15	35	4.90	93	2	3	3.22
2	Consulting Services Construction	43	2	2	4.65	13	0	0	0
3	Consulting Services besides Construction	33	4	0	0	23	0	0	0
4	Other Services	27	3	0	0	17	0	0	0
5	Work Construction	133	12	5	3.75	13	2	0	0
	Total Amount	949	36	42		159	4	3	

Source : BPPBJ, 2020.

From table 1 above , it can be seen that application e-reverse auction still low and under 5% of amount package procurement carried out in DKI Jakarta Province. In the reality implementation election provider not yet in accordance with plan timetable the election that has been arranged before. In 2019, happened fail auction by 3.8%, while expected conditions happening fail auction is by 0%. And utilization E-Reverse Auctions in 2019 and 2020 only averaged 4.33% and 3.22%. Problem lateness in determination tender winner especially because happening fail auction this must solved with utilization E-Reverse Auction optimally.

From the description above , it is expected that BPPBJ DKI Jakarta Province could implementing e-reverse auction optimally and as a strategy in answer a number of formula the problem Government DKI Jakarta Province in the implementation process procurement goods / services , including :

1. How effectiveness and efficiency in procurement goods / services in application E-Reverse Auction ?
2. How understanding perpetrator procurement goods / services (PA/KPA, PPK, Pokja Election , Head of UKPBJ, Manager Procurement Goods /Services, and Providers Procurement related goods /services e-reverse auction in its application in procurement goods / services ?
3. Type procurement what is the most appropriate , efficient and effective in application E-Reverse Auction ?
4. What just factors blocker or constraint in application E-Reverse Auction ? . And what is the solution strategy ?

As for the purpose from writing this are :

1. Describe level effectiveness and efficiency in procurement goods / services in application E-Reverse Auction.
2. Describe understanding perpetrator procurement goods / services (PA/KPA, PPK, Pokja Election , Head of UKPBJ, Manager Procurement Goods /Services, and Providers Procurement related goods /services e-reverse auction in its application in procurement goods / services .
3. Describe type the most appropriate , efficient and effective procurement in application E-Reverse Auction .
4. Describe factors blocker or constraint in application E-Reverse Auction and settlement strategy from obstacles that.

MATERIALS AND METHODS

Studies this use mix method approach (combine qualitative and quantitative) with method descriptive based on events that have happen . Method this give a picture that deep to observed problem . Observation conducted in the process of implementation procurement goods / services at BPPBJ DKI Jakarta Province carried out for 1 month from March 1 , 2021 to March 28 , 2021 and with addition extension time observation on July 7 , 2021 until with July 21 , 2021. Instrument study is guidelines Observations that contain various aspect evaluation application to e-reverse auction that has been arranged before .

Subject study this is application e-reverse auction on procurement goods / hope in the Government DKI Jakarta Province in 2019 and 2020. Procurement goods / services in 2019 were 949 packages and in 2020 there were 159 packages . Each is categorized on the type of procurement goods , procurement profession construction , procurement service shared consultancy on procurement service consulting construction and procurement service non- construction consultancy , as well as procurement service other . Key informants in study this is perpetrator procurement consisting of on PA, KPA, PPK, Head of UKPBJ, Pokja Selection / Manager Procurement Goods /Services, and Providers Goods /Services involved in implementation procurement goods / services .

Relevant population _ are PA/KPA/PPK, UKPBJ, Pokja Election a total of 1465 people. For determine amount sample perpetrator procurement goods / services in study this used formula Slovin (Sofyaningrum , 2010) as following :

$$\frac{N}{n} = 1 + Ne^2$$

n = quantity sample

N = quantity population

e = critical value (limit of accuracy) desired (percent of allowance for inaccuracy due to sampling error) with an error tolerance of 5 % (in social research it is usually between 5% - 10%).

Based on formula Slovin the amount the sample is of 317 people.

Data collection is done through observation live, interview, study documentation or studies literature and questionnaires.

1. Observation Direct

Observation is technique data collection carried out through observation, with accompanied records to state or behavior object target. In Thing this researcher To do observation direct related with application / utilization e-reverse auction in procurement goods / services , observation This was carried out at BPPBJ DKI Jakarta Province and UKPBJ.

Observation conducted in the process of implementing e-reverse auction on procurement goods / services carried out at BPPBJ DKI Jakarta Province . From observation the obtained data, including the number of package procurement , quantity packages that failed to tender, the number of packages that use e-reverse auction , and results observation to perpetrator procurement namely UKPBJ, Pokja Selection , PPK, Provider , and Manager Procurement Goods /Services.

From result observation working group election already understand to application e-reverse auction and already convinced to results e-reverse auction so that no occur failed bidding. Use time implementation e-reverse auction by Pokja Selection and listed in document selection average 60 minutes . In time 60 minutes the the average provider does income offer repeat as much as 2-3 times depending on from number of bidding items . The more few items offer the more often provider To do offer repeat.

Observations made to User Budget (PA)/ User Power Budget (KPA)/ Official Maker Commitment (PPK) obtained that e-reverse auction only understood some PA/KPA/PPK people only part big new understand to implementation of e-reverse auction after explained by Pokja Selection during procurement review goods / services . From the results of a review or consulting the new then conducted revision document election with use e-reverse auction. and time the implementation of the e-reverse auction is carried out on average in time 30 - 60 minutes .

2. Interview

Interview is method data collection with method ask direct (communicate) direct) with respondents . In interview there is an interaction process Among interviewer with respondent .

Interview in general shared Becomes two, namely Interview not structured and interview structured . Interview not structured often also called Interview indepth interview intensive , interview qualitative , and interview open interview ethnographic . Whereas Interview structured often also called Interview standardized interview which is structured the question already set before (usually written) with choices the answer already provided .

Interview this showed for dig understanding related e-reverse auction . Through Interview expected researcher knowing more things _ deep about participant in interpret situations and phenomena that occur , where Thing this no can found through observation .

Interview conducted against 19 perpetrators procurement goods /services consisting of of 5 PA/KPA/PPK/PPTK from technical and non-technical SKPD (Department of Highways , Department of Investment and PTSP, Department of Resources Water Resources , the Library and Archives Service, and the Copyright Office Works , Spatial Planning, Land), 14 people from BPPBJ/UKPBJ and Pokja Election / Office Procurement .

From result interview conducted to PA/KPA/PPK one of respondent from PPK answered question at the moment interview " How " level effectiveness and efficiency application of e-reverse auction on procurement goods / services " with answer " should " can more effective and efficient because from experience happening reduced tender failure about 30% with implementation of e-reverse auction. Application of E-Reverse Auction yet optimally used for reduce failed bidding, because our understanding (PA/KPA/PPK/PPTK) about E-Reverse Auction is not maximal. We just follow directions and results the study given working group Selection . "

There are also those who answered " As PA/KPA/PPK we haven't yet " know about the e-reverse auction which is innovation new in procurement goods / services and the benefits for procurement goods / services . After explained by Pokja at the time clarification new tender document we know there is method new in election goods / services . Possible later after we study and prove more effective and efficient we will using e-reverse auction as a solution in procurement goods / services ."

Interview conducted to Head of UKPBJ (Work Unit) Procurement goods /services) in five areas of City Administration and City Hall also to working group or Manager Procurement Goods /Services all average answer that implementation e-reverse auction actually more effective and efficient also saves time as well as reduce failed tender / re- tender . Why hasn't UKPBJ yet apply e-reverse auction optimally because still there is Pokja not yet understand procedures and methods e-reverse auction too because perpetrator procurement in Thing is this PA/KPA/PPK no include e-reverse auction in the document election though already explained at the time clarification initial and tender proposals from OPD and UPT so that working group no apply e-reverse auction . one things to be blocker existence recofusing budget in 2020 , so that many package procurement canceled goods / services .

Related type procurement the most appropriate , effective , and efficient goods / services perpetrator procurement (PA/KPA/PPK, Head of UKPBJ/ Pokja Selection / Manager goods and services) in part big answer procurement goods is type the most appropriate , effective and efficient procurement if applied e-reverse auction.

3. Study Documentation and Studies Literature

Studies documentation through results implementation procurement goods / services at BPPBJ DKI Jakarta Province . Document various results of the implementation process procurement goods / services carried out , including : proposals procurement, documents election, HPS, document offers, specifications technical / KAK, schedule implementation procurement and determination tender winner.

Use studies literature as technique secondary data collection obtained from read , study , research , study , and study existing literature relation with studies this . Activity this addressed for get information as base theoretical in understand and discuss weaknesses and strengths encountered in the field . Studies literature conducted for get definition , performance data organization , and results related research with studies this .

4. Questionnaire

Use questionnaire as technique secondary data collection and strengthening qualitative data obtained from sample with calculated amount with formula Existing Slovin relation with studies this . Activity this addressed for get information as base practice in understand and discuss weaknesses and strengths encountered in the field .

THEORETICAL FRAMEWORK

Research Previous :

A number of results research ever conducted related E-Reverse Auction which is as following :

- 1. Steve Jones, Ray Hackney, Zahir Irani, 2007, E-Government: E-Reverse Auction Case Study .**
In paper this served findings from studies case deep exploration regarding with e-Reverse Auctions (eRA) in the . sector public England . Finding this highlight that era can improve the procurement process , realize savings cost and reduce time delivery . The study also noted that era could generate disbenefits, including connection bad buyers and suppliers and implications social . Paper this pick lesson from analysis studies case . This served with destination for inform theory and practice .
- 2. Stephen de la Harpe , 2012, The Use of Electronic Reverse Auction in Public Procurement in South Africa.**
Application The E-Reverse Auction conducted in the Government of South Africa increases savings cost and time for all type procurement , especially procurement Work Goods and Construction with procurement items not enough of 20 types of goods / work items .
- 3. Samir K. Srivastava, 2012 , Managerial implications from Indian case studies on e-reverse auctions**
E-Reverse Auction perform best in competitive and capacity markets high and is the dominant strategy moment the focus is at cost search low per supplier , when percentage drop prices offered by suppliers moment this low and moment product standardized . Amount the optimal bidder is five to ten . Mostly findings this in line with literature but some of them are also different .
Destination from paper this is for investigate experience implementation e-reverse auction (eRA) in various group companies and sectors in Indian context , for get useful insight for theory and practice .
E- RA boost effectiveness of the procurement process and facilitate access to supplier new . Also leads to standardization procedure procurement , reduction cycle order , drop price and general level more service high . Paper this will help companies in India and other countries to develop policies , strategies and procedures moment apply eRA .
- 4. Jan Pavel, Emilia Sičáková-Beblavá , 2013 Do E-Auctions Realy Improve the Efficiency of Public Procurement? The Case of the Slovak Municipalities.**
From research this found that every offer repeated occur drop price about 3.4% of expected price . Use of related e-auctions with enhancement amount submit offer of 0.7, which means average decrease from price winner approximately 2.4% of expected price .
Research results this also concludes that the application of e-auctions brings impact no directly on the price victory . The reason is more transparent rather than " standard " tenders. This possible influence trust antidote and upgrade amount them .
- 5. Frantisek Janke, Martin Dujcak , Mojmir Pridavok , 2015 , The Impact of Competition among Suppliers on Procurement Results Public Procurement is no Exception.**
E-Reverse Auction have ability for lower price product , have Becomes popular in the community procurement lately this and trend this estimated will Keep going continues . E-Reverse Auction is highly dependent on market conditions and from studies literature emphasize importance amount participating bidders in E-RA for results auction . In study this is proven about impact competition between participating suppliers in E-RA against tendering efficiency . Research results this support existing studies with evidence given to the sample latest from procurement data public use linear regression .
- 6. Tomáš HANÁK et al., 2018, Effect of Electronic Reverse Auctions on Competition and Abnormally Low Bids in Public Construction Procurement .**
In a number of year Lastly , the importance use e-reverse auction in procurement construction sector public has increase , because could produce savings substantial price . However , also criticized because could result in low and

abnormal bidding . Study this aim for explore impact E-Reverse Auction to competitive in contract profession construction and occurrence offer too much price low and abnormal . Research results quantitative about construction tenders in Czech disclose that use / lower amount bidder at a time increase possibility happening offer abnormally low .

- 7. **Sarip Hidayatuloh , Meinarini Utami , Israel Febiastri Said, 2018** , Analysis and Design E-Reverse Auction System on Procurement Goods and Services (Study Case : PT Mega Energi Processindo). In study this made helpful system _ implementation negotiation until determination tender winner in the vendor selection process .
- 8. **Mohamed Fakher Bentaleb , 2020** , The Evolution of Electronic Reverse Auctions: Towards a Multi-Criteria Approach. Destination first article this is for explain the process of two type E-Reverse Auction held in the market. In section second , we try answer Question : What ? with To do E-Reverse Auction truly optimizing chain supply after more from two decade used ?. We will also try for show interest from global vision and not only on drop the price of this E-RA process . On the other hand, the case of procurement public in France will studied for highlight opportunity new offered by " opposite related multi- criteria auctions with auction electronic traditional .

Base Theory

Following a number of definition or definition from procurement goods / services :

- 1. According to the Big Indonesian Dictionary :
Procurement goods / services means offer for submit price and buy profession on provision goods / services .
- 2. According to Regulation President Number 16 of 2018 Article 1:
Procurement goods / services is activity procurement goods / services by Ministries/Institutions/ Regional Apparatuses financed by the APBN/APBD whose process since identification needs , until with hand over accept results job .
- 3. According to Wikipedia:
Procurement is an activity process for fulfillment or provision demand and supply goods or service below contract or purchase direct for Fulfill needs business . Procurement could influence whole process flow goods because is part important in the process .
- 4. By general procurement goods and services is something activity for get goods or services whose processes started from planning needs until solved whole activity for get goods or service . Procurement goods and services alone could shared Becomes two . First , procurement goods and services in the sector government and second procurement goods and services in the sector private . In sector government , implementation process procurement ongoing goods and services must in accordance with the rules that have been set .

From the existing understanding , appears definition that There are 2 (two) interested and involved parties in procurement goods / services this . Party first are Ministries/Institutions/ Regional Apparatuses (K/L/PD) as those conducting offer procurement goods / services and parties second is provider (Individual nor in the form of a business entity) that offers for Fulfill Request will goods / services. Whereas in the selection process provider needed ordinary team _ called with Group Work Election (Pokja selection) .

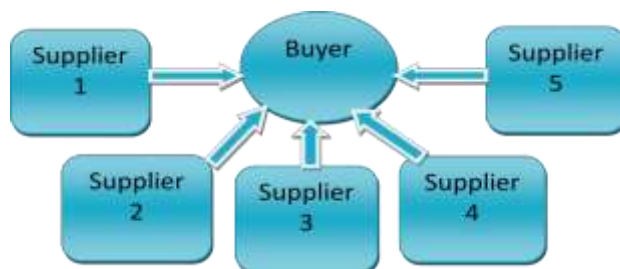


Figure 1. How E-Reverse Auction Takes Place (Wyld , 2012)

Picture 1 above describe form from reverse auction . Reverse auction is other forms of auction n. In reverse auction buyer look for seller potential in accordance with specification goods or the service you want bought it . In implementation , seller To do bidding oppose seller other for secure position , control price offered _ for goods or service down Keep going continuously . With thereby winner from bidding the is the seller who offers lowest price .

Income Offer Repeat (reverse auction) based on Regulation President Number 16 of 2018 concerning Procurement Government Goods /Services (Perpres 16/2018), as mentioned in Article 1 number 42 which reads " E-Reverse Auction " is method offer price by repeated ." Innovation this is something choice in the selection process provider . Why mentioned as a choice ? Mentioned in Article 50 paragraph (11) that " Offer " price could conducted with method offer price by repeated (E-reverse Auction)." With thereby because " can " done " , then could understood that e-reverse auction Becomes a choice , can done , may or may not done .

E-Reverse Auction , in book Excellence in Public Sector Procurement written by Stuart Emmett and Paul Wright is mentioned that " best value" will more difficult obtained with reverse auction, with thereby use method more " traditional / conventional " procurement right .

So no surprising when in Minister of Work Regulation Public and Public Housing more precisely in Article 91 of the Regulation of the Minister of Work Public and Public Housing Number 14 of 2020 concerning Standards and Guidelines

Construction Services Procurement through The provider (PermenPUPR 14/2020) states that " Method " delivery offer price by repeated in the Tender (e-reverse auction) no enforced for Consulting Services Construction and Works Construction . ", utilization E-Reverse Auction this deleted because the " best value" on the job service construction no could achieved with use reverse auction .

According to Stuart Emmett and Paul Wright, the emphasis reverse auction is the right process used in procurement whose specifications clear and simple as well as characteristics focus to decision could got it price lowest . With thereby according to Stuart Emmett and Paul Wright more appropriate use method reverse auction is on goods / services that are in leverage or routine quadrant of matrix Kraljic .

For implementation procurement goods , services consulting and procurement service others included in quadrant routine and leverage so that everything could use e-reverse auction . This thing in accordance with strategic plan of procurement goods / services performed every organization .

EFFECTIVENESS

Indicator effectiveness used for analyze e-reverse auction in Procurement Process Goods /Services at BPPBJ DKI Jakarta Province . Indicator in effectiveness used is in accordance with which Richard M. Steers refers . According to the opinion of Ricard M. Streers (in Nadia Azlin, 2013: 18) says a number of size from effectiveness , namely :

1. Quality it means the quality produced by the organization
2. Productivity it means quantity from services produced
3. Alertness that is evaluation thorough in connection with possibility in Thing solution something Duty special with good
4. Efficiency is comparison a number of aspect performance to cost for produce performance the
5. Income that is amount source power still left after all costs and liabilities fulfilled
6. Growth is something comparison about existence
7. Stability is maintenance structure, function and resources power along time
8. Accident that is frequency in Thing repairs that result in losses time
9. Spirit work that is existence feeling bound in Thing achievement goals , which involve effort addition , togetherness goals and feelings have
10. Motivation is existence emerging power from every individual for reach destination
11. Cohesion that is fact that the members organization each other like one each other, meaning work same with good , communicate and coordinate
12. Dexterity adaptation it means existence something stimulation new for change procedure standard the purpose of the operation for prevent freeze against stimulation environment .

By general , understanding effectiveness this is something the state of showing level success or also achievement something measured goals with quality , quantity , and also time , according to with already planned before .

There are also those who explain the meaning of effectiveness this is something level a person 's success or organization with method certain in accordance with desired goal achieved . In other words, the more many successful plan achieved so something activity or activity considered the more effective .

Effectiveness be measured with use standard in accordance with reference R&D Ministry of Home Affairs (1991) as shown in Table 2.

Table 2. Standard Size Effectiveness In accordance Reference R&D Ministry of Home Affairs

Ratio Effectiveness	Achievement Level
Above 80	Very Effective
60 – 79.99	Enough Effective
40 – 59.99	Not Effective
Under 40	Very not effective

Source : R&D Ministry of Home Affairs , 1991

EFFICIENCY

For more understand what is the meaning of efficiency , we can refer to expert opinion . Following this is understanding efficiency according to experts :

According to Mulyamah (1987; 3)

Efficiency is size compare plan for use input with realization use or in other words use actual

According to SP Hasibuan (1984; 2334)

Efficiency is comparison best between input (input) and output (result) Among profit with sources used), and optimal results are achieved with use source limited power . In other words, the relationship Among what have done .

Salim and Woodward interpret efficiency is something the state of showing achievement comparison best Among input and output in something maintenance service public . (Hardyansyah , 2011:52).

Kost and Rosenwig say there is three condition could said achievement efficiency namely :

1. When with using the same input , can produce more output big ;
2. With use more input small can produce the same output ;
3. With use large input produce more output big . (Kost and Rosenwig , 1979:41).

Measurement efficiency refers to Standard Size Effectiveness In accordance Reference R&D Modified Ministry of Home Affairs for used in measurement efficiency , as in table 3.

Table 3. Standard Size Efficiency In accordance Modification Reference R&D Ministry of Home Affairs

Ratio Efficiency	Achievement Level
Above 80	Very Efficient
60 – 79.99	Enough Efficient
40 – 59.99	Not Efficient
Under 40	Very not efficient

Source : R&D MoHA , 1991 (Modification)

RESULTS AND DISCUSSION

Focus study carried out on implementation procurement goods / services performed During 2019 and 2020. In period time not enough more two year has held amount package procurement goods / services , for knowing amount package that has been implemented , author will presenting data recapitulation of the procurement process goods / services carried out by BPPBJ and UKPBJ data as of December 28 , 2020 are explained in the table 4 that amount tender package according to type procurement there is procurement goods a total of 713 packages , procurement profession construction 133 packages , procurement service consulting construction of 43 packages , procurement service non- construction consultancy 33 packages and procurement service more 27 packs with amount whole Packages implemented in 2019 amounted to 949 packages , while in 2020 there were 949 packages Covid-19 pandemic and its consequences budget refocusing so that implementation procurement goods / services experience cancellation however implementation procurement permanent done . In 2020 it has been doing procurement goods a total of 93 packages , procurement construction of 13 packages , procurement service consulting construction of 13 packages , procurement service non- construction consultancy 23 packages and procurement service more 17 packs with amount whole Packages implemented by BPPBJ and UKPBJ were 159 packages

Table 4. Total Tender Package

No	Type Procurement	2019	2020
		Amount Package	Amount Package
1	Goods	713	93
2	Consulting Services Construction	43	13
3	Non- Construction Consulting Services	33	23
4	Other Services	27	17
5	Work Construction	133	13
	Total Amount	949	159

Source : BPPBJ DKI Jakarta Province

In 2019, BPPBJ DKI Jakarta Province includes UKPBJ apply e-reverse auction in accordance with Presidential Decree number 16 of 2018, on type procurement goods 35 packages , procurement service consulting 2 package construction and procurement profession construction of 5 packages and quantity package with e-reverse auction a total of 42 packs . While in 2020 only apply e-reverse auction by type procurement goods as many as 3 packages . This thing could seen more briefly in table 5 below this.

Table 5. Application of E-Reverse Auction in Procurement Goods /Services

No	Type Procurement	2019 _			2020 _		
		Amount Package	E-Reverse Auction (Package)	E-Reverse Auction (%)	Amount Package	E-Reverse Auction (Package)	E-Reverse Auction (%)
1	Goods	713	35	4.90	93	3	3.22
2	Consulting Services Construction	43	2	4.65	13	0	0
3	Consulting Services besides Construction	33	0	0	23	0	0
4	Other Services	27	0	0	17	0	0
5	Work	133	5	3.75	13	0	0

	Construction						
	Total Amount	949	42		159	3	

Source : BPPBJ DKI Jakarta Province

Validity Test and Reliability Test

Before conducted data reliability test , conducted data validity test . The test conducted with using SPSS. This thing because the data will be measured must be valid, and new next with data reliability test . However , if the measured data invalid , then no need conducted data reliability test .

Reliability test calculation results Cronbach's Alpha method (r count) can be seen in Cronbach's Alpha column , which is 0.910 with N of Items showing that amount of items or amount The question that is inputted into the variable view is 35. So that could said that Cronbach's Alpha results for 35 data items or 35 questions , **which is 0.910** .

Then , for knowing what is the data could trusted or no then _ if calculation r count > r table 5%, where r count seen from table results calculations obtained on SPSS, while the r table 5% is seen in the table that has been specified , as in the appendix .

After that , look appropriate N value with amount respondent from the existing data , namely amount respondent or the value of N, which is 50. Look at the r table 5%, then is known that r table for the data is 0.279. Then, can concluded , that r count > r table 5%, that is **0.910 > 0.279, so the data is reliable or could reliable and consistent** .

Effectiveness and Efficiency Application of E-Reverse Auction

1. Effectiveness Application E-Reverse Auction In Procurement Goods /Services

Research results about effectiveness e-reverse auction in the procurement process there are goods / services at BPPBJ obstacle , because happening The COVID-19 pandemic has resulted in no maximum application e-reverse auction . This thing occur consequence there is a refocusing of the budget which has an impact on reducing amount package procurement goods / services at BPPBJ DKI Jakarta Province and at UKPBJ-UKPBJ spread across the DKI Jakarta area. Besides it 's still adjustment with related SPSE system application e-reverse auction . In regulation president number 16 of 2018 application e-reverse auction no is obligation but choice can used or no .

Analyze effectiveness e-reverse auction in the procurement process goods / services in DKI Jakarta Province based on the first indicator that destination from applied e-reverse auction in DKI Jakarta Province is doing regulation laws and regulations that apply throughout Indonesia with implementation must in accordance with regulation the as well as for reduce fail army or re - tender that can hinder service to society .

Achievement destination consist of 2 sub indicators , namely period time and targets which are concrete targets . The first sub indicator that is period time could said in accordance with state implementation e-reverse auction in procurement goods / services in DKI Jakarta Province when Regulation President Number 16 of 2018 concerning Procurement Government Goods /Services appears , Government DKI Jakarta Province also started strive for follow desired execution regulation the that is with start apply e-reverse auction in implementation procurement goods services in 2019 then next until 2020 then application e-reverse auction on implementation procurement goods / services in DKI Jakarta Province have been applied optimally up to moment this.

The second sub - indicator is targets which are concrete targets . Government DKI Jakarta Province in application e-reverse auction has been strive to reduce happening failed tender or re- tender , for year 2019 and 2020 as of date end December 2020 number whole package in procurement goods / services in DKI Jakarta Province in 2019 there were 949 packages , with the completion of the 913 package tender process , and there are failed to tender 36 packages which is 3.79% of amount tender packages , and conditions There are 42 tender packages that implement the e-reverse auction around 4.42%. While in 2020 there are 159 packages , with completion of the 155 package tender process , and there are failed to tender 4 packages that is 2.51% of amount tender packages , and conditions 3 packages of tender packages that implement e -reverse auction around 1.89%. Packages withdrawn by OPD are 4 packages because budget prioritized for handling of COVID 19. This is already Fulfill indicator from achievement objectives and sub- indicators targets which are concrete targets. Indicator second effectiveness is integration that is measurement to level ability something organization for stage socialization or communication and development consensus . Integration concerns the socialization process .

Indicator third effectiveness is adaptation means as ability organization for adapt self with the environment . Related with suitability program implementation with conditions in the field . Indicator it is very related with condition source power people and means infrastructure that supports the implementation e-reverse auction in the procurement process goods / services in DKI Jakarta Province , condition source power Humans in BPPBJ and UKPBJ are very fulfilling because recruited employee is staff who understand with procurement goods / services and is also a office functional certain that is manager procurement goods / services , besides understanding to technology information and communication . Then means very influential infrastructure is internet network where in all the location of each OPD has been have internet network and have there is planning addition Required internet network in accordance with usage .

Provider goods / services based on results Interview disclose that condition source power people and means existing infrastructure have condition quality that can support implementation procurement goods / services by electronic or this e-procurement especially the e-reverse auction .

E-reverse auction in the procurement process goods / services in DKI Jakarta Province have been walk enough shown effective from fulfillment whole indicator effectiveness according to Richard M. Steers of condition implementation application of e-reverse auction on procurement goods / services in DKI Jakarta Province .

From result data analysis performed related application / utilization e-reverse auction obtained results as following

:

Table 6. Effectiveness Application of E-Reverse Auction

No	Indicators / Variables	Effectiveness %	Information
1.	Success utilization of E-Reverse Auction	73.68	Enough effective
2.	Success accuracy procurement process time with take advantage of E-Reverse Auction	73.68	Enough effective
3.	PA/KPA/PPK Satisfaction with utilization of E-Reverse Auction	68.42	Enough effective
4.	Success transparency in utilization of E-Reverse Auction	93.33	Very Effective
5.	Success competitive in utilization of E-Reverse Auction	93.33	Very Effective
6.	Working Group Performance Election	93.33	Very Effective
7.	Competence working group Election	84.21	Very Effective
8.	Implementation Planning , Preparation , Selection of E-Reverse Auction	80.88	Very Effective
9.	Supervision on process and results after application of E-Reverse Auction	93.33	Very Effective
10.	The implementation of E-Reverse Auction improves participation provider	73.68	Enough Effective
11.	Quality and Performance of E-Reverse Auction Provider	68.42	Enough Effective
12.	E-Reverse Auction reduces fraud and KKN	73.68	Enough Effective
13.	Type Procurement Goods using E-Reverse Auction	94.73	Very Effective

Description :

80 – 100 : very effective

60 – 79.99 : enough effective

40 – 59, 99 : less effective

0 – 39.99 : not very much effective

From result study got that application E-Reverse Auction "very effective " seen from accuracy time , transparency, competitiveness and level participation provider however satisfaction obtained from User Budget , User Power Budget and Office Maker Commitment " enough " effective " .

2. Efficiency Application E-Reverse Auction In Procurement Goods /Services

Research results about efficiency e-reverse auction in the procurement process goods / services in DKI Jakarta Province there are obstacles in the form of existence lateness handover and delay views document in planning procurement goods / services Thing the allow happening lateness start implementation of tenders. Condition the could tricked with increase coordination Among user budget / power user budget / office maker commitment with working group Election Thing the could helped with personal approach between working group Election with each user budget / power user budget / office maker commitment to the coordination process could walk with good .

Then for avoid lateness views document , between working group Election must increase intensity coordination and order as well as consistent with current job implemented . In Thing this gift a regular schedule is also a must enforced in implementation planning procurement to run in accordance schedule that has been determined and not occur lateness in the planning process procurement .

Indicator efficiency in chapter this used for analyze e-reverse auction in the procurement process goods / services in DKI Jakarta Province . According to Kost and Rosenwig there is three condition could said achievement efficiency namely :

1. When with using the same input , can produce more output big
2. With use more input small can produce the same output
3. With use large input produce more output big .

Application e-reverse auction on procurement goods / services that have been conducted by electronic or e-procurement as one of the part from where is e-government ? give one benefit from e-government that is reduce by significant total cost administration , relations , and interactions issued government nor its stakeholders for necessity activity everyday . Based on results findings say that condition Government DKI Jakarta Province in effort push budget there is efficiency to ceiling 28% budget with nominal IDR 80,553,703,637.00 and efficiency against HPS is 23% with a nominal value of Rp 66,169,113,701.82 . Then party provider disclose that e-reverse auction helps save cost making document offers and minimizes wasted data and interactions direct Among party working group Elections and parties provider already restricted because application e-reverse auction in procurement goods / services use technology information and internet network .

Time required in application e-reverse auction on procurement goods / services in DKI Jakarta Province have been arranged inside timetable where is the tender stage ? whole implementation conducted guided by appropriate according to schedule that has been agreed Among working group Elections and parties provider , thing the show that the procurement process goods / services in DKI Jakarta Province can be in progress short because in accordance with existing schedule . Implementation e-reverse auction estimated time delivered 30 minutes - 60 minutes but the most set time implementation offer repeated in 60 minutes . In time 60 minutes this provider could To do offer repeated more than 2 (two) times.

Condition the covered in conditions that can said achievement efficiency according to Kost and Rosenwig that is if with using the same input , can produce more output big .

From result data analysis performed related application / utilization e-reverse auction obtained results as following :

Table 7. Efficiency Utilization of E-Reverse Auction

No	Indicators / Variables	Efficiency %	Information
1.	Success utilization of E-Reverse Auction	73.68	Enough Efficient
2.	Success accuracy procurement process time with take advantage of E-Reverse Auction	73.68	Enough Efficient
3.	PA/KPA/PPK Satisfaction with utilization of E-Reverse Auction	68.42	Enough Efficient
4.	Success transparency in utilization of E-Reverse Auction	93.33	Very efficient
5.	Success competitive in utilization of E-Reverse Auction	93.33	Very efficient
6.	Working Group Performance Election	93.33	Very efficient
7.	Competence working group Election	84.21	Very efficient
8.	Implementation Planning , Preparation , Selection of E-Reverse Auction	80.88	Very efficient
9.	Supervision on process and results after application of E-Reverse Auction	93.33	Very efficient
10.	The implementation of E-Reverse Auction improves participation provider	73.68	Enough Efficient
11.	Quality and Performance of E-Reverse Auction Provider	68.42	Enough Efficient
12.	E-Reverse Auction reduces fraud and KKN	73.68	Enough Efficient
13.	Type Procurement Goods using E-Reverse Auction	94.73	Very efficient

Description :

80 – 100 : very efficient

60 – 79.99 : enough efficient

40 – 59, 99 : less efficient

0 – 39.99 : not very much efficient

From result study got that utilization E-Reverse Auction "highly efficient " views from accuracy time , transparency , competitiveness and level participation provider however satisfaction obtained from User Budget , User Power Budget and Office Maker Commitment " enough " efficient ".

Understanding perpetrator procurement on the implementation of e-reverse auction

1. Understanding User Budget / User Power Budget / Official Maker Commitment to E-Reverse Auction

Understanding level perpetrator procurement in Thing this User Budget / User Authorization Budget / Office Maker Commitment obtained that level understanding perpetrator procurement User Budget / User Authorization Budget / Office Maker Very understanding commitment as much as 33.33%, understand as much as 50.0% and not understand as much as 16.7% being very not understand no there is .

Understanding related most frequent e-reverse auction got from explanation working group Selection at the time discussion suggestion procurement goods / services to be implemented by PA/KPA/PPK.

In implementation procurement goods / services with method e-reverse auction, no PA/KPA/PPK by direct propose and include in document election . After there is explanation more details from working group Election or Head of UKPBJ, then PA/KPA/PPK include application e-reverse auction in document election from package proposed procurement especially in procurement goods with type the number of commodities no more of 20 types . If type commodity the item

more than 20, then provider goods / services tend no see market price and not To do calculation repeat to the offer . Provider only To do offer repeat to become lowest bidder . This thing result in time implementation contract and handover accept results profession Becomes obstacles , such as happening denial from giver work because no accordingly quality , quantity and time with contract .

Understanding level User Budget / User Authorization Budget / Office Maker Commitment to e-reverse auction can seen in the diagram below this .



Figure 3. Understanding PA/KPA/KDP in Application of E-Reverse Auction

2. Understanding UKPBJ/ Pokja Selection / Manager Goods and Services for E-Reverse Auction

From result analysis carried out to level understanding perpetrator procurement in Thing this is UKPBJ/ Pokja Selection / Manager Goods and Services obtained that level understanding perpetrator procurement of UKPBJ/ Pokja Selection / Manager Very understanding goods and services as much as 23.08%, understand as much as 69.23% and not understand as much as 7.69% being very not understand no there is .

Understanding related e-reverse auction obtained by the perpetrators procurement of UKPBJ/ Pokja Selection / Manager Goods and Services , among others, from socialization , ask answer and discussion with LKPP as institution builder , ask answer and discussion with friend colleague or from results implementation e-reverse auction ever conducted as well as read regulation related e-reverse auction .

From result analysis obtained level understanding perpetrator procurement (UKPBJ/ Pokja Election) only 7.69% are lacking understand Thing this caused no take advantage of it e-reverse auction in procurement goods / services , no read Rules and not follow socialization conducted by BPPBJ DKI Jakarta Province . Besides that because method new so often occur denial from PA/KPA/PPK because PA/KPA/PPK haven't yet understand with e-reverse auction .

Analysis result level understanding of UKPBJ/ Pokja Selection / Manager Goods Services to e-reverse auction can seen in the diagram below this .

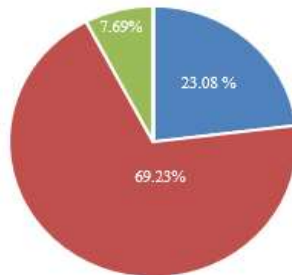


Figure 4. Understanding UKPBJ/ Pokja Selection / Manager Service Goods In Application of E-Reverse Auction

3. Understanding Provider Goods /Services against E-Reverse Auction

From result analysis obtained level understanding perpetrator procurement in Thing this provider goods / services there are 73.3% who understand and 7.69% who do not understand , thing this caused because no take advantage of it e-reverse auction in procurement goods / services , no read Rules and not follow socialization conducted by BPPBJ DKI Jakarta Province .

Provider tend will look for know things new in procurement goods / services so that more active for understand e-reverse auction including profit _ make a loss in application e-reverse auction .

Analysis result level understanding Provider to e-reverse auction can seen in the diagram below this .



Figure 5. Understanding Provider In Application of E-Reverse Auction

In implementation procurement goods / services with method e-reverse auction, provider will observing document election . Participants will tall if package procurement goods / services carried out is type procurement goods with type the number of commodities no more of 20 types /item. If type commodity the item more of 20 items, then provider goods / services tend will To do offer repeated without count market price and not To do calculation repeat to the offer . Goal only one occupy rating first with price offer lowest meaning _ Becomes tender winner . This thing occur because understanding provider to application good e - reverse auction however impact result in time implementation contract and handover accept results profession will Becomes obstacles , such as happening denial from giver work because product / goods no accordingly quality , quantity and time acceptance with contract .

Type The Most Appropriate Procurement for the Implementation of E-Reverse Auction

From result observation , interview and study analyzed documentation _ obtained that type the most appropriate , efficient and effective procurement in application E-Reverse Auction are :

1. Procurement Item :

In accordance with the Karljic matrix where there is quadrants I, II, III and IV. Procurement kind of goods the commodity is at most 20 types in accordance with matrix Kaljric is in Quadrant 1 (leverage).

Type procurement this is the most appropriate implemented e-reverse auction. In accordance with results analysis that there are 18 people (94.73%) who answered that type procurement goods is type the most appropriate procurement and 1 (one) person who answers procurement service consulting as type the most appropriate procurement . Analysis result by complete could seen in figure 13 as following :

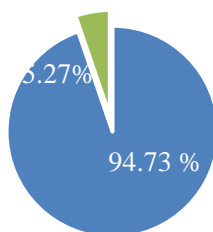


Figure 6. Type The Most Appropriate Procurement Apply E-Reverse Auction

2. Procurement Work Construction

According to Minister of Public Works and Public Housing Regulation Number 14 of 2020 concerning Standards and Guidelines Construction Services Procurement through Provider , which mentions that implementation offer repeated (e-reverse auction) no apply for procurement profession construction and procurement service consulting construction . Based on regulation the so working group Election no apply e-reverse auction by type procurement profession construction and procurement service consulting construction .

But could considered future for conducted exception for profession simple construction and offering items a maximum of 20 items and amount the provider a lot . because of the type procurement this enter in quadrant I of the Karljic matrix .

3. Procurement of Consulting Services

a. Procurement of Consulting Services Construction

According to Minister of Public Works and Public Housing Regulation Number 14 of 2020 concerning Standards and Guidelines Construction Services Procurement through Provider , which mentions that implementation offer repeated (e-reverse auction) no apply for procurement profession construction and procurement service consulting construction . Based on regulation the so working group Election no apply e-reverse auction by type procurement profession construction and procurement service consulting construction .

In 2019, BPPBJ carried out the selection process through provider with application e-reverse auction on procurement profession construction and procurement service consultancy . That thing held because not yet there is Minister of Work Regulation Public and Public Housing that do not apply e-reverse auction on types of procurement that .

b. Procurement of Non- Construction Consultancy Services

Application e-reverse auction by type Procurement of Non- Construction Consulting Services no held both in 2019 and 2020 .

4. Procurement of Other Services .
Application e-reverse auction by type Procurement of Non- Construction Consulting Services no held both in 2019 and 2020 .

Factor obstacles and solutions in the application e-reverse auction

1. Participation Provider
In procurement goods / services participation provider is highly expected participation in procurement goods / services for service to Public could realized as soon as possible possible . However no close possibility still there is providers who do not participate with all reason including the benefits that will obtained from procurement goods / services the too small , specified requirements difficult fulfilled , competition too tight , and so on .
For avoid things the perpetrator procurement must make detailed and real planning and strategy.
2. Offer Time Repeat
Bidding time precise repeat used depending on the type procurement , number of items offered , quantity provider , complex or whether or not procurement that . From result analysis , the time used in the e-reverse auction process is between 30 minutes up to 60 minutes depends from type procurement , number of items offered , quantity provider , complex or whether or not procurement that . The more many items on offer of course the longer time for provider for To do offer repeat .
For prevent offer price Repeat the offer price abnormal (too low), then perpetrator procurement (Pokja Selection) limit time implementation E-Reverse Auction maximum 45 minutes . For more the details need conducted study advanced related time implementation the most appropriate e-reverse auction .
3. Bid Price Results Repeat
From result analysis carried out , factors most frequent obstacle / obstacle found is existence offer price repeats at the end time implementation e-reverse auction , the winner To do offer price too low (can until offer repeat more small 60% of HPS). This is what becomes constraint for perpetrator procurement goods / services (PA/KPA/PPK and Pokja Election) for set as winner because at the time realization contract quality procurement goods / services no in accordance with document contract .

CONCLUSION

From result the discussion above could concluded as following :

1. Application E-Reverse Auction is very effective and efficient good from side time , cost , transparency and competitive .
2. Understanding level perpetrator procurement especially for PA/KPA/PPK against utilization e-reverse auction in procurement goods / services 83.3% to 92% who are very understanding and understanding . Still needed existence enhancement understanding in procurement strategy planning especially for PA/KPA/PPK in planning procurement goods / services . Understanding E-reverse Auction for PA/KPA/PPK get from Socialization , Explanation working group Elections and Regulations President No. 16 of 2018. For increase understanding of related PA/KPA/PPK E-Reverse Auction need conducted enhancement competence with utilise clinic consulting Procurement Goods /Services at BPSDM DKI Jakarta Province that can be purchased accessed by who only , when only and where just through scan barcodes .
3. Factors and constraints in utilization e-reverse auction could seen from results monitoring to utilization e-Reverse auction from 2019 to 2020 , some big working group Election agreed for no utilise e-reverse auction because worry to quality and quality goods / services if winner in offer repeated too low . For avoid offer too repetitive low so in document election working group Election in set time implementation offer repeated for a maximum of 16 to 45 minutes (six mercy until four twenty five) minutes .
4. Type procurement the right goods / services , effective and efficient in utilization e-reverse auction from results study is type procurement goods or if in the Karjlic matrix quadrant 4 (leverage) and quadrant 3 (routine).
But no close possibility conducted for profession simple construction / simple and not complex . Utilization e-reverse auction efficient and effective if done on type procurement goods / services that have specification simple / simple and not complex , sum provider kind of many , the number of work items < 20 work items , and there are in the leverage and routine levels of the Karjlic matrix .

SUGGESTION

From result study above increase application e-reverse auction , then recommended as following :

1. For increase effectiveness and efficiency application e-reverse auction recommended :
 - a. LKPP made policies and regulations technical as well as SPSE development based on proposals from government the area that has apply e-reverse auction for implementation e-reverse auction more optimal.
 - b. Propose to LKPP for add in SPSE application restrictions score offer repeated (E-Reverse Auction), for example the lowest maximum 80% of HPS value and appropriate with principle value for money
2. Facebook User Budget / User Power Budget and Office Maker Commitment required have Certificate Competence Procurement Goods /Services, if no have removed from his position .
3. BPPBJ did innovation procurement goods / services with application e-reverse auction optimally through integration system e-reverse auction with e-order (SIERA-ORDER) owned government DKI Jakarta Province and socialize it to

all OPD in the neighborhood Government DKI Jakarta Province and take advantage of clinic PBJ consulting online via barcode scan.

4. To do study more continuation deep related e-reverse auction , such as how much time efficient and effective e - reverse auction in implementation , type procurement profession construction , solutions in implementation of e-reverse auction, and so on .

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