Critical Success Factors of Electronic Procurement Implementation in The Ministry of National Development Planning/Bappenas Republic of Indonesia

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Abstract

Since the implementation of public procurement system faces many challenges, the government started implementing electronic government procurement (e-procurement) as the government policy to provide better public procurement. The aims of e-procurement system was to make the purchasing process of goods and services more economical, efficient, and effective, to reduce corruption and conspiracy and to increases transparency and accountability as well. For these reasons, this research aimed to describe the implementation of e-procurement and identify the Critical Success Factors (CSFs) which supported the successful implementation of e-procurement in ministerial level. The preliminary research recommended the Ministry of National Development Planning/National Development Planning Agency (Bappenas) to be the research's location. This research implemented sequential exploratory mixed method design. This method combined the qualitative research to analyze the successful implementation of e-procurement in Bappenas and the quantitative research with Exploratory Factor Analysis (EFA) to identify the CSFs' influences toward the successful e-procurement implementation in Bappenas. The results show that Bappenas succeeded in implementing the values and principles of e-procurement in practice. Furthermore, the result of EFA shows that the successful e-procurement implementation in Bappenas was influenced by the eight Critical Success Factors, namely: the e-procurement system (13.34%), the system security (12.48%), education and training (11.75%), top management support (11.63%), re-engineering business process (8.82%), change management (8.54%), the e-procurement strategy (7.78%) and competence and capable providers (6.84%). The methodology and result of this research could have significance for the government institutions in identifying the critical success factors to enhance the successful e-procurement implementation.

Keywords: *Bappenas, electronic procurement (e-procurement), Successful e-procurement implementation, Critical Success Factors (CSF), public procurement, Exploratory Factor Analysis (EFA).*

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I. Introduction

The public procurement of goods and services in Indonesia is the government spending mechanism that plays an important role in the utilization of the state and local budget. According to the National Public Procurement Agency (LKPP) about 40% of annual budget of either State Budget (APBN) or Local Budgets (APBD) are allocated for public procurement. In the meantime, the Corruption Eradication Commission (KPK) revealed that there was enormous budget leakage in public procurement process in Indonesia. To this regard, one of the efforts to close the gap of potential corruption in the procurement process is implement the electronic government procurement (e-procurement), by implementing the e-procurement closes the chance of conspiracy, increasing transparency and accountability of budgeting process (KPK, 2015).

The e-procurement system growing rapidly in Indonesia and became one of the most important milestone of procurement reforms in Indonesia. Government has developed standard system of e-procurement implementation, although the result of implementation might be different for each government institution. This is because the government issued limited guidance in terms of action, especially the guidance on how the policy is implemented. Although, Public sector agency has identified e-procurement as a priority to be implemented, it lacks in evaluation and assessment on the critical factors that influence the success of the e-procurement initiative (Vaidya et al., 2006). In order to fill up the gap on the e-procurement evaluation and assessment in the government institution, this research will study on the critical factors of electronic procurement, which can be the determinant factors of an organization's success in implementing e-procurement.

Preliminary research is conducted to select the location, which is focus on one out of eight ministries of the fourth category based on Presidential Regulation Number 7 Year 2015 regarding the State Ministry. The standardized audit from the BPK were used as a standard to select research location. According to the data from BPK only The Ministry of National Development Planning/National Development Planning Agency consistently received Unqualified Opinion (WTP) during 2012 to 2016, which is indicated as the successful ministry in implementing the government procurement.

II.   Literature Review

According to Vaidya et al. (2006) public electronic procurement refers to the use of the Internet-based Inter-organizational Information System, which automates and integrates any part of the procurement process in order to improve the efficiency and quality in public procurement, and to promote transparency and accountability in the wider public sector. E-procurement can be done in two ways, e-tendering and e-purchasing. E-tendering is the electronic procurement process of goods/services which is followed by the providers, while e-purchasing is the procurement process of goods/services made through electronic catalogue. Based on the definitions, hereinafter, the term of e-procurement in this research is considered means referring to e-tendering.

The e-procurement makes the procurement process more transparent and helps organizations achieve good governance impacts (Hui et al., 2011). The success of e-procurement system is when the system can meet with the public expectation toward the ideal procurement process. Three main factors are required to achieve the e-procurement initiative success, system and technology, organization and management and the e-procurement practices and processes (Vaidya et al., 2006).

In order to achieve that success, the organization has to empower all of potential resources which belong to them. Moreover, the organization have to recognize the key areas on their business process which have the influential impact to their performance. These unique key areas can be defined as the organization's critical success factors (Caralli et al, 2004). Critical success factors is the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department or organization. Critical success factors are the few key areas where 'things must go right' for the business to flourish and for the manager's goals to be attained (Bullen & Rockart, 1981).

The implementation of the CSFs on the e-procurement are pioneered by Vaidya et al. (2006). Based on their argument, the government assumed that implementation of e-procurement is as important as a leverage factors on e-governance initiative, however, the evaluation of e-procurement implementation especially one related with the CSFs is very limited. By identifying the critical factors on the successful implementation of e-procurement initiatives in public sector, they reconstructed the set of CSFs which could be used in the future as a guideline in developing the successful implementation of e-procurement.

III.   Descriptive Statistics Analysis

Based on the respondents' demographic characteristics, the total respondent of this survey is 75 people. The occupation of respondents are civil

servant (60%) and private (40%). Among the 60% of civil servants, 28% are respondents from PPK, 22.7% from ULP and 9.3% from PPHP. Meanwhile the 40% of private respondents are individual consultant (29.3%), goods provider (6.7%), consulting company (2.7%) and construction provider (1.3%).

Most of respondents have a good knowledge on the procurement regulation either in theory or practice. It is proved by the Certificate of Procurement Expertise ownership, 62.7% of the respondents are certificate holder. The data present that respondents have sufficient knowledge about e-procurement implementation, as for most of respondent have more than three year experiences. Respondents who have experience between 1-3 years is accounted 18.6%, 4-6 years reached 33.4%, 7-9 years attain 21.4%, 10-12 years achieve 17.3% and the rest 9.3% have more than 13 years procurement experiences.

Table 1. Demographic Characteristics of Respondent

	Freq	Valid Percent	Cumulative Percent
Occupation			
Civil Servant	45	60.0	60.0
Private	30	40.0	100.0
Total	75	100.0	
Position			
Commitment Maker Official (PPK)	21	28.0	28.0
Procurement Service Unit (ULP)	17	22.7	50.7
Individual Consultant	22	29.3	80.0
Project Recipient Officer (PPHP):	7	9.3	89.3
Goods Providers	5	6.7	96.0
Consulting Company	2	2.7	98.7
Construction Providers	1	1.3	100.0
Total	75	100.0	
Certificate of Procurement Expertise			
Yes	47	62.7	62.7
No	28	37.3	100.0
Total	75	100.0	
Procurement Experience			
1 - 3 Years	14	18.6	18.6
4 - 6 Years	25	33.4	52.0
7 -9 Years	16	21.4	73.4
10 - 12 Years	13	17.3	90.7
13 Years above	7	9.3	100.0
Total	75	100.0	
Education			
Master	39	52.0	52.0
Bachelor	36	48.0	100.0
Senior High School	0	0.0	100.0
Total	75	100.0	

Source: *Author Analysis, 2018*

3.1. Questionnaire Design

In order to identify the critical success factors which influence the successful e-procurement implementation in Bappenas and collecting the data, this research had used the close-ended survey questionnaire. The results of this survey questionnaire had been used to identify the CSFs of e-procurement implementation and had been arranged into the CSFs framework and contributed to the successful implementation of e-procurement in Bappenas.

The questionnaire consists of the 54 (fifty four) successful indicators derived from the 10 (ten) factors of critical success factors. Each indicator was valued by respondents by giving their opinions toward the importance of each indicator. All of the 54 (fifty four) successful indicators applied the same pattern of Five-Point Likert Scale. In which 5 means strongly agree (SA); 4 means agree (A); 3 means neutral/either agree or disagree (N); 2 means disagree (DA); and 1 means strongly disagree (SD) (Oppenheim, 1992).

The sample size of this survey are 107 samples, however the number of people participating in this survey are 75 people. It means that response rate or completion rate of the sent out questionnaire is 70%.

3.2. Descriptive Analysis of the Critical Success Factors

The respondents' perception on the factors that influence e-procurement implementation in Bappenas which are generated into 54 indicators (V1-V54) are described as follows.

1. **Top Management Support**

Figure 1. Top Management Support
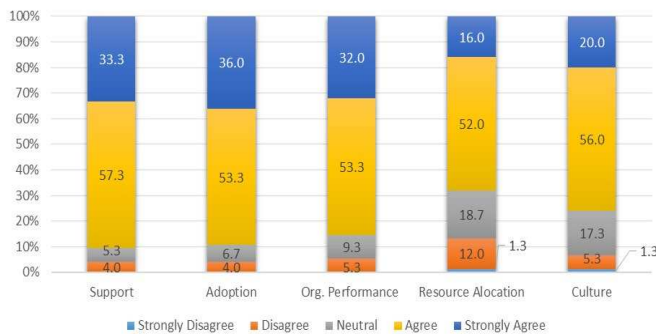
The results show that top management in Bappenas supported and considered e-procurement is important to be implemented in the organization. Therefore they need to allocate the adequate resources and increase some efforts for developing conducive environment of the work culture to get the best result of e-procurement implementation.

2. E-Procurement Strategy

Figure 2. E-Procurement Strategy
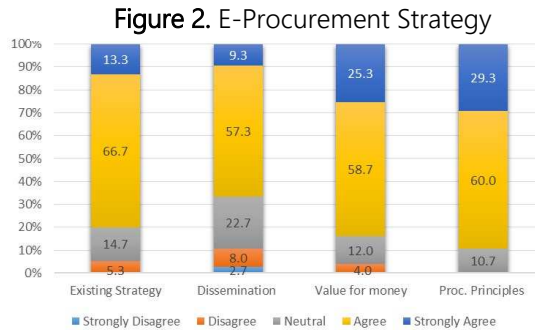
This results indicate that Bappenas has strategies to implement e-procurement system and successful to implement the procurement principles in e-procurement process. For the meantime, Bappenas needs to enhance the efforts in disseminating the e-procurement implementation strategies.

## 3. Re-Engineering Business Process

Figure 3. Re-Engineering Business Process
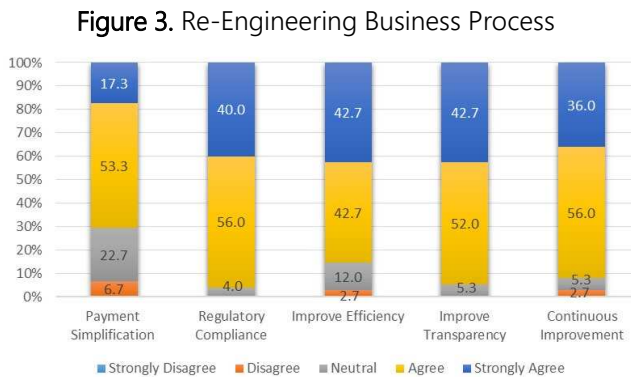
The chart shows that Bappenas achieve the improvement of efficiency and transparency by implementing the e-procurement system. Although the implementation of e-procurement system could not simplify the payment process yet, Bappenas continuously conducts improvement in developing better e-procurement system, indeed in accordance with the regulation.

4. Technology Standard

Figure 4. Technology Standard
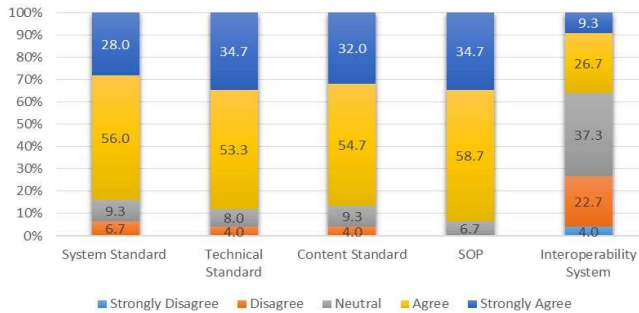
Bappenas implemented the standard system of e-procurement and provided the internal SOP to carry out the transparent and accountable e-procurement process. Anyhow, this system has not yet been connected with the other e-governance system in Bappenas.

5. Security and Authentication

Figure 5. Security and Authentication
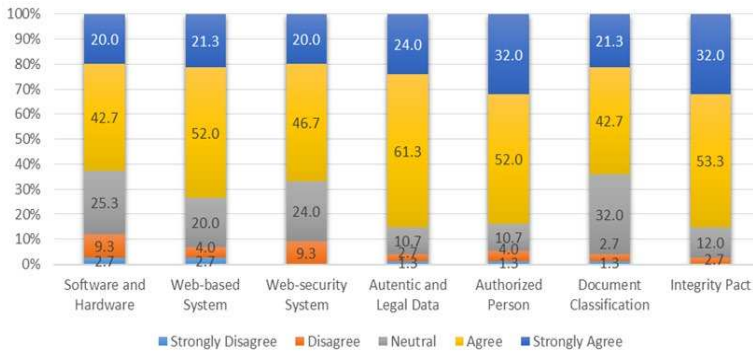
The data shows that Bappenas has reliable e-procurement system which could provide the authentic e-procurement data and only authorized person could access the system because each stakeholder has their own personal identity and password to enter the system. In addition, Bappenas has to increase the quality of hardware, software, and the security system, likewise to the document classification regulation.
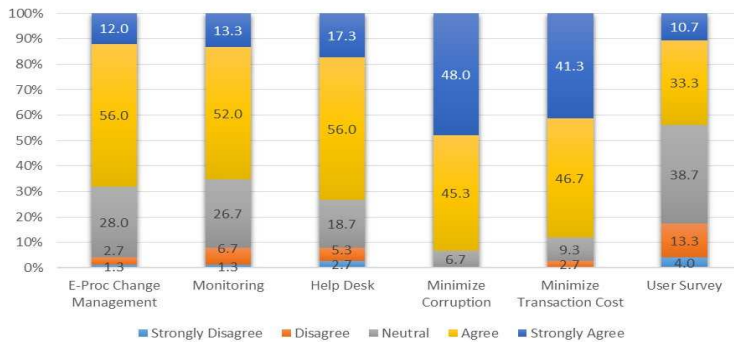
6. System Integration

Figure 6. System Integration
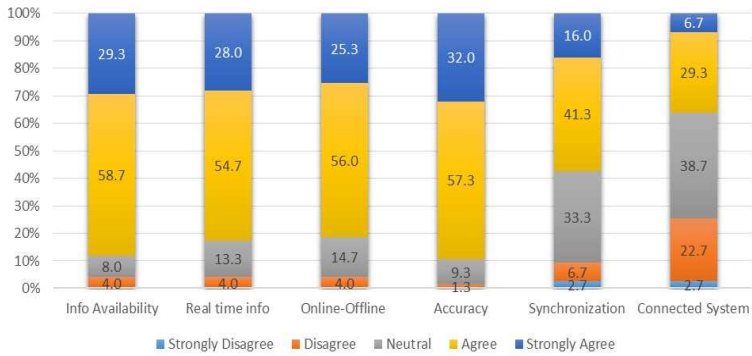
The result indicate that Bappenas has provided the accessible accurate e-procurement information through both online and offline media, on the other side, those e-procurement information need to be synchronized with other e-governance information system.

7. Change Management

Figure 7. Change Management

The data shows that the change management on e-procurement system could reduce the potential KKN practice and minimize the transaction cost. Meanwhile, Bappenas need to increase the efforts to monitor the progress of change management. A survey could be an effective way to monitor and evaluate the system, and it is one of deem necessary attentions.

8. Performance Measurement

Figure 8. Performance Measurement
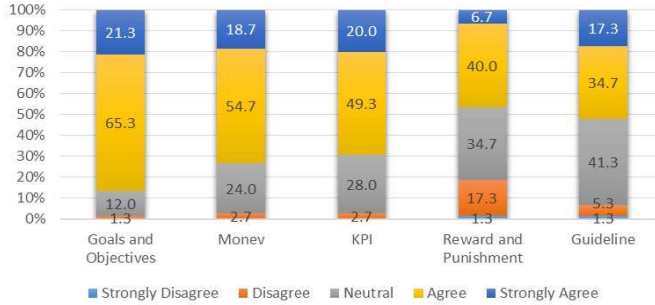
Bappenas has developed the clear and measureable e-procurement goals and objectives included of KPI to be the standard of measurement. Bappenas also monitored and evaluated the achievement of e-procurement performance. In addition, it is found that the result of the performance measurement does not have a link with the reward and punishment system, because Bappenas' existing guidelines are not adequate enough to measure the e-procurement stakeholders' performance.

9. Education and Training

Figure 9. Education and Training
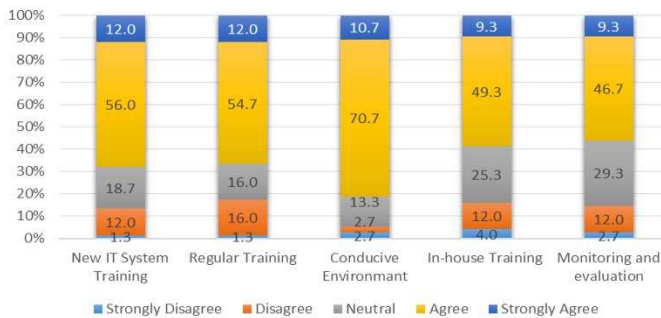
The data indicates that Bappenas has provided the education and training to enhance the human resources capability in e-procurement. However, some respondents still argued that the results of those education and training have not optimum. The reason of this argument is due to the weakness of the monitoring and evaluation system.

10. Stakeholders Adoption

Figure 10. Stakeholders Adoption

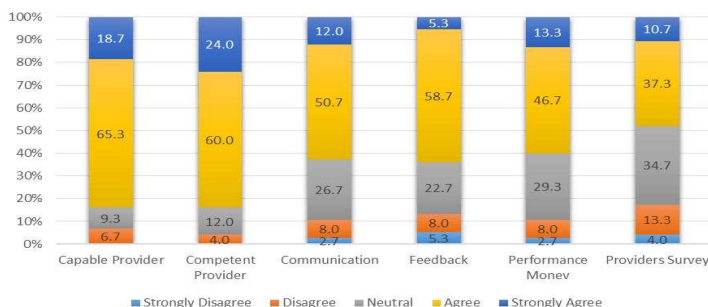E-procurement process could produce the qualified providers. Moreover, for a certain case Bappenas need to enhance the communication to get feedback from the external stakeholders by conducting the performance of monitoring and evaluation, and the stakeholders' satisfaction survey.

IV. Result and Discussion

The descriptive statistics analysis of ten critical successful factors and the set of indicators which are underlying the factors revealed that the mean value of all indicators are greater than 3.0. This depicts that all indicators which were developed in this research are considered important for the implementation of e-procurement in Bappenas.

Table 2. Statistics Summary

	Obs	Mean	Minimum	Maximum	Range	Cronbach Alpha (Reliability)	N of Items
Top Management Support	75	4.021	3.693	4.213	.520	.898	5
E-procurement Strategy	75	3.937	3.627	4.187	.560	.810	4
Re-engineering Business Process	75	4.211	3.813	4.373	.560	.847	5
Technology Standard	75	3.963	3.147	4.280	1.133	.876	5
Security and Authentication	75	3.912	3.680	4.147	.467	.902	7
System Integration	75	3.864	3.147	4.200	1.053	.851	6
Change Management	75	3.876	3.333	4.413	1.080	.828	6
Performance Indicator	75	3.755	3.333	4.067	.733	.882	5
Training and Education	75	3.611	3.480	3.840	.360	.926	5
Stakeholders Adoption	75	3.682	3.373	4.040	.667	.830	6

Source: Author Analysis, 2018

The information presented on the Table 2 shows that all of the ten CSFs have a mean value greater than 3.5. Based on that results, all of ten success factors are considered important to the successful implementation of e-procurement in Bappenas. On the other hand, based on the analysis some indicators have no significant influence on the successful e-procurement implementation in Bappenas. Therefore the researcher decided to eliminate the indicators with the percentage level of less than 60% on agree or strongly agree opinion of respondents. Based on the predefined limits, the researcher eliminated nine indicators, namely V19 (36%); V31 (57.3%); V32 (36%); V38

(44%); V42 (46.7%); V43 (52%); V47 (58.6%); V48 (56%); and V54 (48%). EFA test was conducted to analyze the 45 developed factors that have the percentage level of above than 60% on agree or strongly agree opinion of respondents.

4.1. Exploratory Factor Analysis Process

In order to identify the CSFs which influences the implementation of e-procurement in Bappenas, the researcher used the Exploratory Factor Analysis (EFA). The EFA is a method used to discover patterns among the variation in values of several variables (Babbie, 2013). The use of factors analysis could uncover latent factors underlying a relatively large set of variables and reduce set of variables into the smaller number.

EFA is used to elucidate the latent variables. The latent variables are based on the re-dimensionalization of variables, which effectively draws new axes over the existing data, creating some factors that capture as much as possible of the total variability in the variables while leaving other factors as residual error (Babones, 2015). The EFA process is completed in three stages: pre-analysis check, extraction and rotation.

The successful completion of pre-analysis check should reassure the researcher to have an appropriate correlation matrix for factor analysis. The analysis then continued to conduct the factor extraction. The purpose of extraction is to identify and retain factors which are necessary in reproducing the initial correlation matrix adequately. Third stage of EFA process is rotation, this process is done to fine more interpretable solutions by producing the simple structure. Simple structure means that each factor has a subset of variables with high loadings and the rest with low loadings (Fabringer, Wegener, MacCallum & Strahan, 1999). This research used Orthogonal Rotation with Varimax Rotation which attempts to maximize the variance of squared loading on a factor (Kim and Mueller, 1978).

In the final result of the EFA test, the table shows that based on the fourth EFA process the KMO value is 0.806 whereas Bartlett test of Sphericity (BS) remain the same statistical significance with 0.000.

Table 3. KMO and Bartlett's Test of Sphericity (4th Test)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.806
Bartlett's Test of Sphericity	Approx. Chi-Square	2323.577
	Df	496
	Sig.	.000

The initial solution after extraction process was conducted and generated the eight factors with the eigenvalue more than 1.0. Meanwhile, the

proportion to have been explained by those eight factors increase to become 81.21%.

Table 4. Total Variance Explained (4th Test)

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.475	42.108	42.108	4.270	13.343	13.343
2	2.886	9.020	51.128	3.994	12.480	25.823
3	2.540	7.936	59.064	3.762	11.755	37.578
4	1.973	6.164	65.228	3.723	11.633	49.212
5	1.681	5.252	70.480	2.825	8.828	58.040
6	1.178	3.681	74.161	2.735	8.547	66.587
7	1.149	3.592	77.753	2.492	7.787	74.374
8	1.108	3.463	81.217	2.190	6.843	81.217
Extraction Method: Principal Component Analysis.						

The final EFA process showed the eight factors and all of the 32 indicators have factor loading value greater than 0.55. It is now found that this research reveal a critical success factors model of e-procurement implementation with distinct indicators rotated to the simple structure. Therefore, after eight dimensional factors were extracted from EFA analysis, those factors were interpreted in each factor based on the grouping indicators.

Table 5. Rotated Component Matrix (4th Test)

	Factor							
	1	2	3	4	5	6	7	8
V15	**.855**	.199	.174	.209	.122	.058	.006	-.035
V17	**.832**	.305	.218	.101	.190	.152	-.003	.194
V16	**.825**	.278	.250	.073	.241	.128	-.002	.177
V18	**.782**	.296	.075	.160	.253	.195	.021	.217
V23	.096	**.819**	.152	.104	.308	.115	.099	-.016
V24	.163	**.763**	.012	.050	.059	.305	.141	-.057
V21	.390	**.755**	.192	.228	.030	-.098	.129	.086
V20	.342	**.752**	.253	.122	.066	.087	.197	.135
V22	.325	**.691**	.259	.225	.071	.029	.142	.235
V45	.124	.285	**.823**	.175	.052	.040	.135	.139
V44	.211	.200	**.777**	.208	.059	.083	.142	.172
V46	.260	.159	**.654**	.042	.088	.440	.143	.167
V39	.310	.099	**.632**	.220	.111	.386	.141	.084
V4	.099	.016	**.562**	.386	.340	.073	.111	.196
V2	.164	.150	.074	**.898**	.098	.144	-.002	.011
V1	.099	.079	.269	**.868**	.170	.141	.056	.045
V3	.195	.215	.150	**.827**	.243	.118	.013	.131
V5	-.029	.224	.342	**.591**	.184	.214	.021	.458
V11	.314	.048	.096	.164	**.794**	.046	.019	.094
V12	.282	.152	.102	.261	**.700**	.229	-.053	.286
V8	-.044	.286	.407	.142	**.669**	.132	.063	-.088
V13	.390	.140	-.180	.249	**.640**	.309	.150	.236
V36	.069	.242	.266	.250	.246	**.715**	-.015	.202
V37	.193	.255	.136	.326	.241	**.714**	-.096	.186
V34	.120	-.147	.137	.331	.141	**.564**	.474	.109
V35	.473	.156	.359	-.086	.007	**.560**	.250	.194
V51	-.205	.182	.052	.098	.020	-.048	**.809**	.161
V52	.125	.220	.220	-.200	-.080	-.037	**.732**	.071
V33	.176	.051	.060	.286	.307	.326	**.624**	-.261
V53	.096	.394	.371	-.032	.011	.212	**.574**	.301
V49	.223	.110	.309	.206	.117	.136	.091	**.791**
V50	.274	.027	.196	.051	.203	.284	.222	**.736**

4.2. Summary Finding

The successful of e-procurement implementation in the organization is influenced by several critical success factors. Hence, the inquiry is needed to

Table 6. Summary Exploratory Factor Analysis Test

Factor	Indicator	Factor Loading	% of variance	Cronbach's Alpha (α)
E-Procurement System	e-procurement system standard (V15),	.855	13.34%	.959
	the content standard on e-procurement system (V17),	.832		
	technical standard of e-procurement system (V16)	.825		
	the implementation of standard operating procedures (V18)	.782		
Security System	authentic and legal data (V23),	.819	12.48%	.916
	authorized stakeholders (V24),	.763		
	reliable web-based system (V21),	.755		
	reliable software and hardware (V20)	.752		
	and have a reliable web-security system (V22)	.691		
Education and Training	e-procurement training regularly (V45)	.823	11.75%	.883
	training on new IT System (V44)	.777		
	Conducive environment (V46)	.654		
	objectives and goals of e-procurement implementation (V39)	.632		
	resource allocation (V4),	.562		
Top Management Support	e-procurement adoption is important (V2),	.898	11.63%	.921
	top management support to implement e-procurement (V1)	.868		
	e-procurement implementation supporting the organization performance (V3)	.827		
	top management develop conducive working culture to implement e-procurement (V5)	.591		
Re-Engineering Business Process	procurement procedures and regulation compliment (V11)	.794	8.82%	.843
	e-procurement improve efficiency of process (V12)	.700		
	implementing value for money (V8)	.669		
	e-procurement improve transparency of process (V13)	.640		
Change Management	free from KKN practice (V36),	.715	8.54%	.816
	reduce transaction cost (V37)	.714		
	e-procurement monitoring and impact assessment (V34)	.564		
	providing help desk (V35)	.560		
E-Procurement Strategy	Intensive communication with stakeholders (V51)	.809	7.78%	.764
	stakeholders feedback (V52),	.732		
	e-procurement change management (V33)	.624		
	procedure to monitor and evaluate on the performance (V53)	.574		
Competence and Capable Providers	capable providers (V49)	.791	6.84%	.877
	competence providers (V50)	.736		

identify which critical success factors are more influential the implementation of e-procurement in Bappenas. By using the EFA, the summary result of critical success factors shows that Bappenas has eight critical success factors that

influence the successful implementation of e-procurement. Those eight CSFs explained 81.217% of variance.

Eight success factors identified in this research can be categorized into three dimension of success e-procurement implementation context. The three dimensions encompasses system and technology, organization and management, and practices and process.

Figure 11. The CSFs Framework
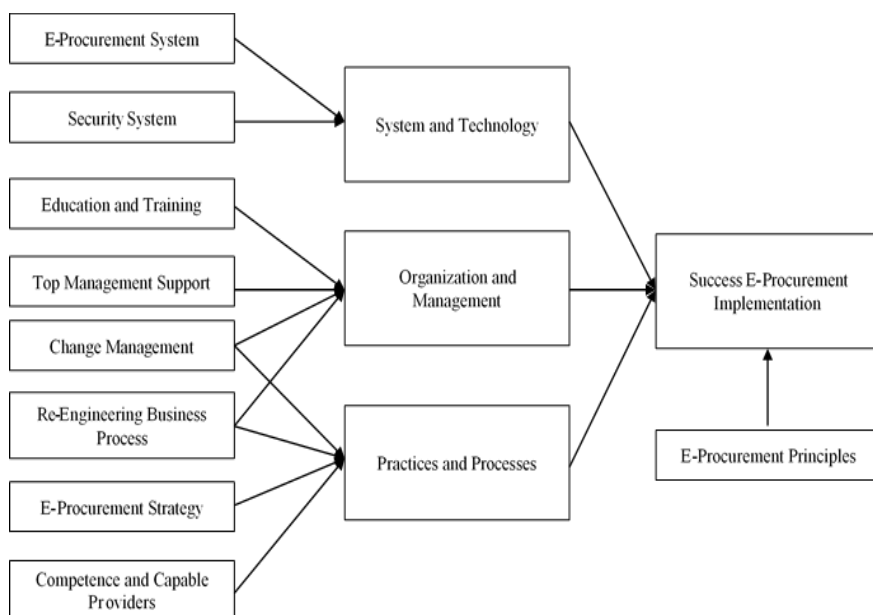
Success Factor 1: E-Procurement System

This factor includes four indicators which explained 13.34% of variance. The implementation of e-procurement system in Bappenas has a significant role as a successful factor of e-procurement implementation. The result shows that the influential indicators on this factor are the standard system, system content and technical system of e-procurement which comply with the regulation. The compliance with the regulation is important because it gives the clear boundary and corridor for the government to carry out the e-procurement system. Therefore, Bappenas implemented the e-procurement standard system which complies with the government regulation.

In the implementation, the system has to be guided by the laws and regulations. In fact, occasionally related laws and regulations provide inadequate arrangement regarding the technical e-procurement procedures. Therefore, the technical guideline is needed to ensure the detailed procedures

are consistently applied in the e-procurement implementation. In the effort to advance the reliability and accountability of e-procurement system, Bappenas developed the internal standardization of e-procurement mechanism which is materialized by establishing the internal Standard Operating Procedures as a guideline of detailed e-procurement implementation.

Success Factor 2: Security System

Security system is the second influential factor that accounted 12.48% of variance of successful e-procurement implementation in Bappenas. The most influential indicator underlying this factor is the guarantee that Bappenas has security system on authentic and legal e-procurement data protection, due to the fact that e-procurement process contains the confidential financial data transaction. Therefore, Bappenas merely gives access to the authorized people by giving them user identity and password to enter the system.

The indicators that influence security system as a successful factor in the implementation of e-procurement can be identified as follows: Bappenas provide authentic and legal data, Bappenas has the reliable hardware and software system and the reliable web security system. Those indicators contributes to the security of transactions. Furthermore, the e-procurement security system in Bappenas is directly coordinated by Planning and Development Data and Information Center, therefore Bappenas could control the security system policy.

Success Factor 3: Education and Training

Education and training factors which explained 11.75% of variance, show that the human resource have become the important role in the successful of e-procurement implementation. Under this factor, the most influential indicator is the regular training. Human resource has the important role on successful e-procurement implementation. The shifting from conventional to electronic procurement led to the transformation in the procurement approach. Therefore, organizations needs to intensify the education and training to the e-procurement implementer to adapt to the change, particularly in the new system of information communication and technology which were adopted by newest version of e-procurement system.

The education and training are placed as one of the most influential successful factor that influence the e-procurement implementation (Vaidya et al, 2006 & 2009, Leipold et al, 2004). The education and training which is conducted in Bappenas becomes the means to develop competency and capability of procurement implementer. Since Bappenas has limitation on the human resource, the management have to carefully manage and allocate the human resources.

Success Factor 4: Top Management Support

E-procurement implementation success is closely related to the support from the top management in the organization. This research confirmed that top management factor have a significant impact on the successful e-procurement implementation which explained 11.63% of variance. Bappenas top management considered that e-procurement is an important process to be adopted in Bappenas. Since Bappenas implements e-governance system, the adoption of e-procurement system is inevitable. Therefore, the top management gave their support to the implementation of e-procurement. The implementation of e-procurement offers opportunities to gain better results in procurement for organization, meanwhile, the managers will experience new responsibilities by implementing this system.

Therefore, the top management in Bappenas takes the opportunity to implement the e-procurement system within organization due to the fact that implementation of e-procurement becomes the leverage factor of an organization performance. The implementation of e-procurement have a significant valuation portion that determine the performance of organization. Since the implementation of e-procurement gives a positive impact for the organization, this research's finding also revealed that the top management in Bappenas has an ability to create the conducive procurement within organization.

Success Factor 5: Re-engineering Business Process

This research accounted re-engineering business process as an influencing factor of successful implementation of e-procurement which covered 8.82% of variance. Since Bappenas is implementing the e-procurement system, it requires the re-engineering of existing procurement process. The result was that Bappenas is able to adapt with the change and maintain the system to achieve success on the implementation.

The result shows that the most influential success indicator is that the e-procurement process was conducted complying with the procurement procedures and regulations. In addition, the adoption of e-procurement business process brought the positive impact to the organization. The e-procurement implementation makes the process more efficient in term of cost efficiency, time effectiveness and achievement of value for money. Furthermore, the implementation of e-procurement improves the transparency of procurement process, which gives the access to the stakeholders to conduct the supervision toward the process. The result shows that the implementation of new e-procurement business process obtain positive response from the procurement stakeholders either internal or external stakeholders.

Success Factor 6: Change Management

There is little doubt that change management gives a tremendous impact on the success e-procurement implementation. Therefore the change management becomes the success factor of e-procurement implementation in Bappenas and explained 8.54% of variance. One of the most influential aspect in change management is that the process of e-procurement in Bappenas are free from the corruption, collusion and nepotism practice.

In addition, the most common problem in Indonesia is high cost in public work implementation. Therefore, the main objectives of e-procurement implementation in Bappenas is reducing the transaction cost. Meanwhile, beside the implementation of change management, Bappenas conducted the regular monitoring and the impact assessment of the e-procurement implementation. This can be a useful effort to mitigate the potential barriers of e-procurement implementation. Furthermore, Bappenas also provides help desk or information center that can assist the procurement stakeholders to get the information or submitting the complaint on the process. However, the organization have to identify the risks which includes internal and external business risk, technology risk and the risks on process control of the system.

Success Factor 7: Electronic Procurement Implementation Strategy

The Organization need to develop executable strategy of e-procurement implementation (Hardy and Williams, 2006). This makes the e-procurement strategy become one of the critical factor that influence the successful implementation of e-procurement which explained 7.78% of variance. The Bappenas e-procurement implementation existing strategy not only emphasizes on the e-procurement system development but also internalizes the procurement principles and value into the organization. To perform their strategy, Bappenas had involved the stakeholders through intensive communication and strategy dissemination to obtain the practitioners feedback. Furthermore, Bappenas also developed the procedures and mechanism to monitor and evaluate the implementation strategy. In the e-procurement strategy formulation, government should explore the complex terrain of e-procurement policy and practice.

Success Factor 8: Competent and Capable Providers.

The last influential factor on successful e-procurement implementation is the providers' competency and capability that covered 6.84% of variance. The final purpose of e-procurement process is obtaining the competent and capable providers to provide the best goods and services for the institution. This research yields the confirmation that e-procurement process in Bappenas could produce the competent providers, which means that the providers have a competency or ability to produce or provide the best goods and services as

required in the auction term of reference. In addition, the implementation of e-procurement could produce the capable or qualified providers as well.

Two out of four factors influencing the usage of e-procurement are the supplier willingness and supplier readiness (Dooley and Purchase, 2006). These implies that there has been change in the supplier attitude toward the use of e-procurement system. Their intention to use the e-procurement system not only merely guarantee them the benefits that they get from this system but also the fact that they have the quality to perform and compete within the e-procurement system.

V.   Conclusion and Recommendation

This research generated valuable contributions in identifying the critical success factors that affect the success of e-procurement implementation in Bappenas. The conclusion of this research are to be presented as follows:

1. Based on the quantitative data analysis by using the questionnaire survey, this research could explore the respondent perception on CSFs that influence the success of e-procurement implementation in Bappenas. The set of questionnaire was developed based on the 10 CSFs and encompassed the 54 indicators of successful e-procurement implementation. Based on the respondents' perception, the result showed that all indicators were considered important as the success factors of e-procurement implementation with mean value of above 3.0. However, nine indicators have no significant impact on successful e-procurement implementation by obtaining less than 60% agreed and strongly agreed from the respondents.

2. The result of exploratory factor analysis proposed eight factors, in which they covered 32 success indicators and influenced 81.217% of variance of the successful e-procurement implementation. Those eight factors are (1) e-procurement system (13.34%); (2) security system (12.48); (3) education and training (11.75%); (4) top management support (11.63%); (5) re-engineering business process (8.82%); (6) change management (8.54%); (7) e-procurement strategy (7.78%); (8) competence and capable providers (6.84%). Those eight CSFs can be categorized into three dimension of success e-procurement implementation, first related to the system and technology, second associated with the organization and management and third bound with the practices and processes of e-procurement.

In spite of the great result to confirm that Bappenas was successful in maintaining the implementation of e-procurement, the research yielded some factors still needs serious attention and improvement from the policy maker. From the eleven factors suggested by the previous literatures, one factor is

omitted due to the inappropriateness with the government nature. Meanwhile, among the ten, two factors disappeared and only eight was proposed to be the critical factors that influenced the successful of e-procurement implementation. This affirmed that the policy makers in Bappenas have to be alert to this warning because the two disappeared factors are related to (1) the system integration, accordingly the result shows that the integration, interconnection and interoperability of e-procurement system with other systems are low. This research proposed to connect the e-procurement system with other e-governance system. (2) Performance measurement, this could be understandable, because the measurement could not be implemented since Bappenas applied the ad hoc personnel and non-permanent structural organization in performing the e-procurement. At the same time, the performance measurement affirmed the personnel and organization criteria to be key performance indicator, then respectively it is difficult to implement the performance measurement in an ad hoc personnel and non-permanent organization. This research proposed to establish the Procurement Service Unit (ULP) as the permanent structural working unit in Bappenas.

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