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Comparative Analysis of the Factors Affecting the Performance of SPBE Implementation in the City of Surabaya and Mojokerto Regency

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Abstract

The implementation of e-government in Indonesia in 2018 changed its name to the Electronic-Based Government System (SPBE) in accordance with the PERPRES No. 95 of 2018. The implementation of SPBE in Indonesia in 2019 an evaluation was held in each region to find out the extent of the implementation of SPBE in each region in Indonesia. The SPBE evaluation produces an SPBE index which is used as a reference in knowing how far the implementation of the existing SPBE in the area. The high and low value of the SPBE index can be caused by various factors, in this study will discuss the comparison of factors and model factors that affect the performance of the SPBE application in the City of Surabaya and Mojokerto Regency. This study uses EFA analysis to determine the performance factor model in the application of SPBE. For the variables in this study using the results of mapping the Digital Service Provision System of System Framework by Samantha Papavasilou with PERMENPAN No. 59 of 2020 which resulted in 17 indicators. The results of this study Surabaya City and Mojokerto Regency have similarities in performance factors but the two regions have differences in performance factor characteristics where there are several performance factors that are superior to Surabaya City than Mojokerto Regency and vice versa. For the performance factor model, the EFA analysis produces 5 performance factors, namely SPBE regulation, digital literacy, IT infrastructure management, Human Resources and system location.

***Keywords**: Electronic Based Government System, E-government, EFA, GRMS, Quantitative*.

Introduction

In Indonesia, e-government began to be implemented in 2001 with the Presidential Instruction No. 6 of 2001 (INPRES). The instruction contains the development and utilization of telematics in Indonesia. Then developed countries have started to implement e-government and finally succeeded in 2003. 3 of 2003. The instruction contains the contents of national policies and strategies regarding the development of e-gov in Indonesia (Nugraha 2018). In 2018 the implementation of e-government in Indonesia was known by a new name, namely the Electronic-Based Government System (SPBE). This is in accordance with Presidential Regulation of the Republic of Indonesia (PERPRES) No. 95 of 2018 which discusses SPBE.

In 2019 MENPAN-RB carried out SPBE evaluation activities based on PERMENPAN-RB No. 5 of 2018 which was carried out by 2 parties, namely the first party, the ministry's internal assessment team, government and regional institutions and the second party, namely by external evaluators. The purpose of this evaluation is to see how far the implementation of SPBE by government agencies, both central and regional (Astiarasanti 2020). Before the results of the 2019 SPBE evaluation came out, several studies regarding SPBE evaluation in areas in Indonesia

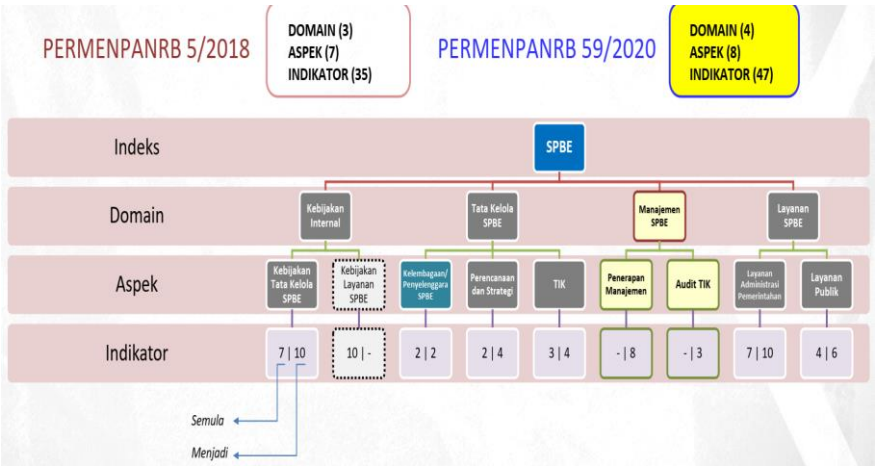
appeared including the SPBE evaluation in Lumajang Regency using MENPANRB Regulation No. 5 of 2018 with the results of the SPBE index in the study being 2.85 (Firdaus 2019).

In the 2019 evaluation, East Java Province received an SPBE index of 3.1 with the highest city or district being Surabaya City with an SPBE index value of 3.72 and for the lowest district in the 2019 SPBE evaluation was Mojokerto Regency with an SPBE index value of 1 ,55. In 2020 MENPAN-RB updated the SPBE evaluation guidelines from PERMENPAN-RB No. 5 of 2018 to PERMENPAN-RB No. 59 of 2020. MENPAN-RB in 2018 has issued guidelines in the evaluation of SPBE, namely PERMENPAN No. 5 of 2018 which was used in the evaluation of SPBE in 2019. However, in 2020 there was an update to their guidelines, namely the emergence of PERMENPAN No. 59 of 2020.

The latest guidelines contain the addition of several indicators, aspects and domains in the SPBE assessment. And also in the latest guidelines there are changes in the assessment of each indicator (MENPANRB 2020). In the latest SPBE evaluation guidelines, there are 47 indicators in 8 aspects and in 4 domains. The domains are internal policies, governance, management and SPBE services while the old guidelines consist of 3 domains. For more details, the difference between PERMENPAN No. 5 of 2018 with PERMENPAN No. 59 as shown in Figure 1 below.

Figure 1.

Advantages of PERMENPAN-RB No. 59 Year 2020



Source: PERMENPAN (2020)

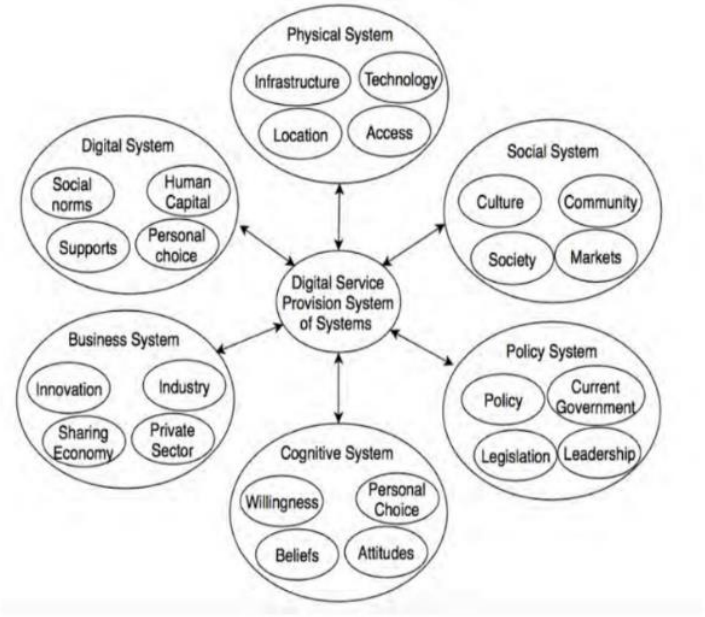
In Samantha Papavasiliou disertation entitled "A Digital Transformation Governance Framework for e Government: A Systemic Approach" he discussed about Digital Service Provision System of System. In his research which produce one framework combines thematic analysis and the GIOA model which is used to create a governance framework called the governance framework or it can also be called digital service delivery system framework. This digital service delivery system framework is generated from the results of thematic analysis identifying four main constituent systems (cognitive, business, infrastructure, and digital).

The other two systems are identified separately. First, social systems are identified based on ATO and industry research. The social system is not directly reflected in the thematic analysis, social norms and people's perceptions appear in the data but are not clearly stated. Second, the

policy system is considered vital to be included outside the analysis results, because policies and legislation are the basis for the transformation of government services from legacy to digital (Papavasiliou 2020). For more details Digital Service Provision System of System, see Figure 2 below.

Figure 2.

Advantages of PERMENPAN-RB No. 59 Year 2020



Source: Samantha (2020)

In this study, we will discuss the comparison of factors that affect the performance of SPBE implementation. This study has a research object, namely in the City of Surabaya and Mojokerto Regency and this study is discussed about the model of performance factors that affect the implementation of SPBE. In this research indicator used mapping instrumen between PERMENPAN No. 59 In 2020 and Digital Service Provision System of System For the performance factor model that affects the implementation of SPBE, the results of the EFA (Exploratory Factor Analysis) analysis will be used because Exploratory Factor Analysis (EFA) can identify the relationship between the indicator variables used and then build a new construct, while the CFA is used to test indicators that have been grouped into their constructs (Sukemi and Trisnawati 2021). The stages in conducting factor analysis are divided into 5 stages, namely (Emerson 2017) determining the variables to be analyzed, calculate and create a correlation matrix, extrationn factor, determination factor and rotating factor.

Methods

In this study, quantitative research methods are used, namely a study that examines a particular population or sample based on the truth and in quantitative research it has a wide research area coverage and a wide level of variation (Mulyadi 2019). Sources of data in this study

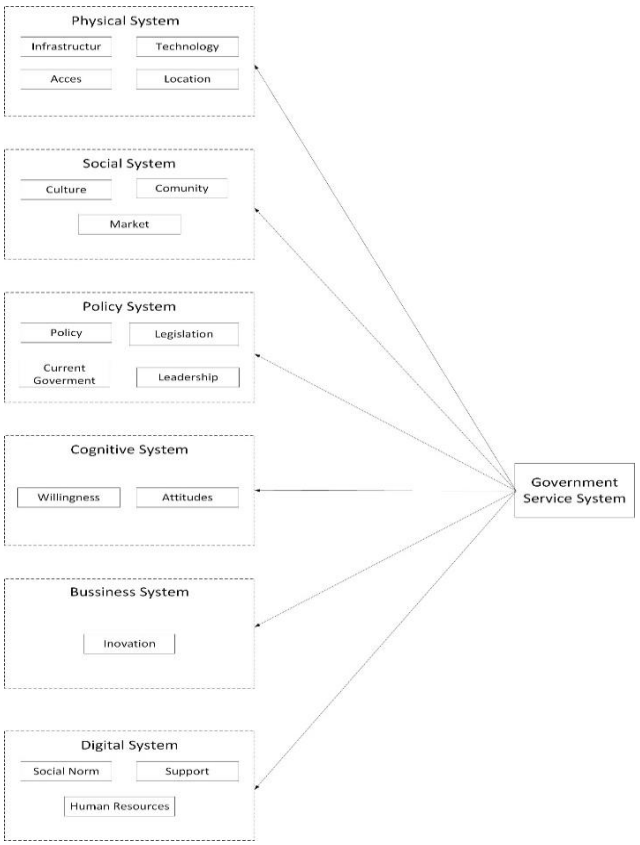
were employees of the Department of Communication and Information Surabaya City and Mojokerto Regency. Data collection method in this study using a questionnaire that uses a Likert scale. The use of the Likert scale is usually to measure the responses, opinions, perceptions and attitudes of a person or group regarding a social phenomenon (Sugiyono 2018).

For the total population in this study amounted to 246 which came from 192 employees of DISKOMINFO Surabaya City and 54 employees of DISKOMINFO Mojokerto Regency. As for the sample in this study, the minimum sample method that can be used is 30 people (Amalia, Dianingati, and Annisaa' 2022). For the variables and indicators in this study, the results of the mapping between the Digital Service Provision Framework and PERMENPAN-RB No. 59 of 2020. The mapping results the instrument in this study has 6 variables and 17 indicators as follows: Physical system with 4 indicators, namely infrastructure, technology, location and access.

Social system with 3 indicators, namely culture, society and market. Policy system with 4 indicators, namely policy, legislation, leadership and current government. Cognitive system with 2 indicators, namely ability and attitude. Business system with 1 indicator, namely innovation. Digital system with 3 indicators, namely social norms, human resources and support. are shown in Figure 3.

Figure 3.

Results of Mapping Framework for Digital Service Provision System With PERMENPAN-RB No. 59 Year 2022



Source: Researcher (2021)

Results and Discussion

Comparation

To test the validity of this study using the Pearson product moment correlation formula. Where in order for the test to pass the validity test on the condition that r count must be greater than r table (Gunawan et al. 2019). Where the r table in this study is obtained from the formula df = n-2 where n in this study is 60 which means 60-2 = 58. Where the r-table of df = 58 is 0.2542. The validity test table is in Table 1

Table 1.

Results Validity Test

Question	Table of r value	Value of r count	Information
T1 (Technology 1)	0.2542	0.1280	Invalid
T2 (Technology 2	0.2542	0.4810	Valid
INF1 (Infrastructure 1)	0.2542	0.3670	Valid
INF2 (Infrastructure 2)	0.2542	0.5310	Valid
L1 (Location 1)	0.2542	0.4720	Valid
L2 (Location 2)	0.2542	0.5580	Valid
A1 (Access 1)	0.2542	0.4320	Valid
A2 (Access 2)	0.2542	0.6630	Valid
K1 (Culture 1)	0.2542	0.5150	Valid
K2 (Culture 2)	0.2542	0.6540	Valid
MSY1 (Society 1)	0.2542	0.5890	Valid
MSY2 (Society 2)	0.2542	0.5890	Valid
MRK1 (Market 1)	0.2542	0.4920	Valid
MRK2 (Market 2)	0.2542	0.4510	Valid
KEB1 (Policy 1)	0.2542	0.4070	Valid
KEB2 (Policy 2)	0.2542	0.5070	Valid
PP1 (Legislation 1)	0.2542	0.3450	Valid
PP2 (Legislation 2)	0.2542	0.5500	Valid
KEP1 (Leadership 1)	0.2542	0.4450	Valid
KEP2 (Leadership 2)	0.2542	0.4040	Valid
PS1 (Current Government 1)	0.2542	0.4000	Valid

Question	Table of r value	Value of r count	Information
PS2 (Current Government 1)	0.2542	0.3000	Valid
KES1 (Willingness 1)	0.2542	0.3800	Valid
KES2 (Willingness 2)	0.2542	0.3320	Valid
S1 (Attitude 1)	0.2542	0.4450	Valid
S2 (Attitude 2)	0.2542	0.5290	Valid
INV1 (Innovation 1)	0.2542	0.2950	Valid
INV2 (Innovation 2)	0.2542	0.2650	Valid
SN1 (Social Norm 1)	0.2542	0.4970	Valid
SN2 (Social Norm 2)	0.2542	0.4870	Valid
SDM1 (Human Resources 1)	0.2542	0.3260	Valid
SDM2 (Human Resources 2)	0.2542	0.4450	Valid
SUP1 (Support 1)	0.2542	0.3860	Valid
SUP2 (Support 2)	0.2542	0.4820	Valid
T1 (Technology 1)	0.2542	0.1280	Valid
T2 (Technology 2	0.2542	0.4810	Valid

Source: Research (2021)

From the table above, it can be seen that the questions above that r count < r table are only questions T1 or technology 1, therefore the question T1 is not included in the further data processing process. For the results of the reliability test using the Cronbach alpha formula in this study as shown in Table 2.

Table 2.

Results Reliability Test

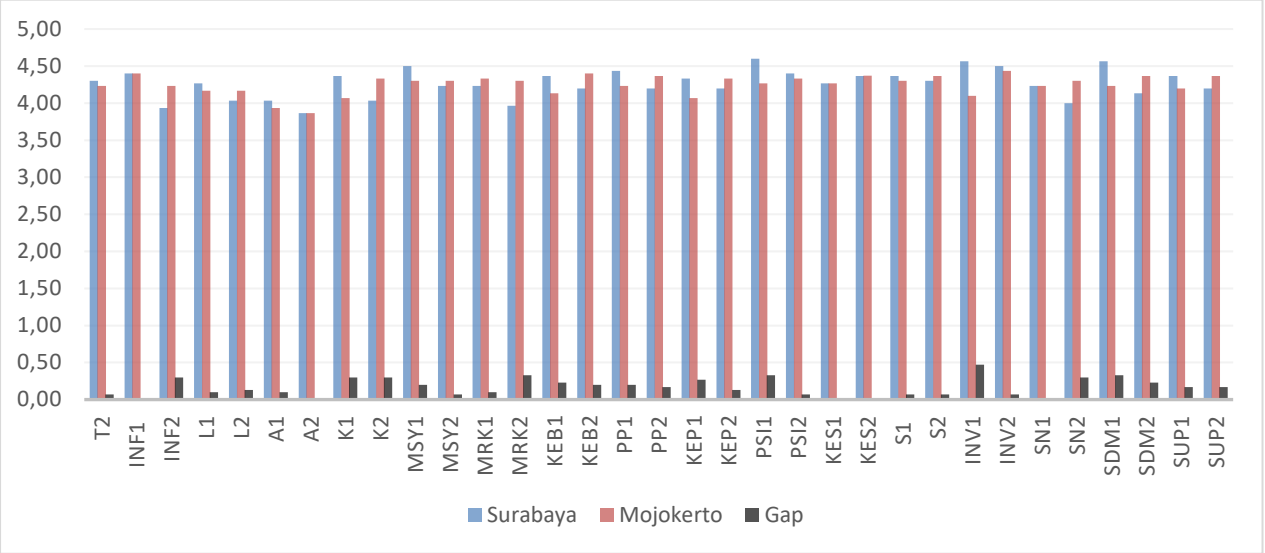
Variabel	Total Item	Cronbach Alpha Value	Infomation
Physical System	7	0.782	Reliable
Social System	6	0.798	Reliable
Policy System	8	0.734	Reliable
Cognitive System	4	0.659	Reliable
Business System	2	0.728	Reliable
Digital System	6	0.652	Reliable

Source: Research (2021)

From the table above, if the Cronbach's Alpha value is more than 0.6 then the measuring instrument can be used in research . So it can be concluded that all variables and indicators in this study are reliable. For comparison of performance factors, it can be seen from the answers of each respondent or employee from DISKOMINFO Surabaya City and DISKOMINFO Mojokerto Regency as shown in Figure 4.

Figure 4.

Performance Factor Comparation Chart



Source: Research (2021)

EFA Analysis

From the picture above, it can be seen that the City of Surabaya and the Regency of Mojokerto have relatively the same performance factors, but when viewed more specifically, the City of Surabaya and Mojokerto Regency have different characteristics of the performance factors. For the same performance factors, namely location, culture, community, policies, laws and regulations, leadership, ability, attitude, human resources and support. Surabaya City has 4 characteristics of performance factors, namely technology, access, current government and innovation, while in Mojokerto Regency it has 3 characteristics of performance factors, namely infrastructure, market and social norms. For the performance factor model generated by exploratory factor analysis as follows for the results of KMO and Bartlet Test as shown in table 3 below.

Table 3.
Results KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.643
Bartlett's Test of Sphericity	Approx. Chi-Square	507.675
	df	136
	Sig.	.000

Source: Research (2021)

From the table above, it is known that the value of KMO MSA is 0.643 which is more than 0.5 and also the value of Bartlett's Test of Sphericity (Sig) is 0.00 <0.05, which means that factor analysis can be continued because it meets the requirements. Due to the EFA requirements, the value of KMO MSA is > 0.5 and the value of Bartlet's Test Of Sphericity (sig) <0.05 (Watkins, 2018). Furthermore, to see the number of factors formed is to use factor extraction. Factor extraction in this study is using the maximum likelihood method. To see the value of factor extraction, use the results from the total variance explained table, where the table results are in accordance with Figure 5 below.

Figure 5.
Table of Total Variance

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.734	27.845	27.845	2.633	15.490	15.490	2.534	14.907	14.907
2	2.778	16.344	44.189	3.359	19.760	35.251	2.438	14.340	29.247
3	2.067	12.156	56.345	1.917	11.274	46.525	2.160	12.704	41.952
4	1.676	9.860	66.206	1.524	8.963	55.488	1.853	10.902	52.853
5	1.035	6.089	72.295	1.009	5.934	61.422	1.457	8.568	61.422
6	.807	4.747	77.041						
7	.661	3.886	80.927						
8	.614	3.614	84.541						
9	.549	3.227	87.768						
10	.462	2.717	90.485						
11	.406	2.388	92.873						
12	.321	1.886	94.759						
13	.296	1.740	96.499						
14	.209	1.232	97.731						
15	.164	.964	98.694						
16	.121	.712	99.406						
17	.101	.594	100.000						

Extraction Method: Maximum Likelihood.

Source: Research (2021)

From the picture above, it can be seen that there are 5 factors that formed 17 indicators that were analyzed because to be a factor the value of the eigenvalue must be >1 (Watkins 2018). To find out the first to fifth factors are filled by any factor using factor rotation. Factor rotation in this study uses Varimax to minimize the number of variables that have a correlation value to the formed factor. To determine the magnitude of the correlation between variables with the five factors can be seen in Table 4 below.

Table 4.
Corelation Factor's

Indicator	Factor				
	1	2	3	4	5
Policy	.818				
Leadership	.652				
Legislation	.582	.452	-.429		
Attitude	.514		.375	.492	
Innovation	.513			.453	-.429
Access	.440	.345			
Public		.814			
Culture	.431	.590			
Technology		.568	521		
Social Norm		.564	.351		
Market		.476			.363
Infrastructure			.858		
Support			.710		
Current Government				.671	
Willingness				.663	
Human Resources				.424	
Location		.300			.895

Source: Research (2021)

From the table above, it can be seen that policies, leadership, laws and regulations, attitudes, innovation attitudes and access have the highest correlation in the first model of SPBE implementation performance factors. Society, culture, technology, social norms (social norms)

and the market have the highest correlation in the second model of performance factors for the application of SPBE. Infrastructure and support have the highest correlation with the third model of SPBE implementation performance factors. The current government, ability and human resources have the highest correlation with the four model performance factors for the implementation of SPBE. And location has the highest correlation with the fifth model of SPBE implementation performance factors.

After the factor rotation, the factor interpretation of the five SPBE application performance factor models that have been formed from the factor rotation will be carried out from the results of the EFA analysis. For the interpretation of factors, it is in Table 5.

Table 5.

Factor Interpretation

Factor	Items	Factor Name
First factor	policy, leadership, legislation, attitude, innovation, access.	SPBE Regulation
Second factor	society, culture, technology, social norms, market	Digital Literacy
Third factor	infrastructure and support	IT Infrastructure Management
Fourth factor	current government, willingness, human resources	Human Resources
Fifth factor	location	System Location

Source: Research (2021)

Conclucion

From the explanation that has been described above, it can be concluded that this research results that the City of Surabaya and Mojokerto Regency have similarities in terms of performance factors in the application of SPBE in their area. However, Surabaya City and Mojokerto Regency also have different characteristics of performance factors. After doing Exploratory Factor Analysis (EFA) there are 5 models of performance factors that affect the performance of SPBE implementation. For the interpretation of the SPBE implementation performance factor model, namely SPBE regulatory factors, digital literacy, system location, Human Resources and IT infrastructure management

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