Identification Of Inhibiting Factors For Implementation Direct Procurement Management Information System

Sugiyono[1], Alfa Firdaus[2],
Erry Rimawan[3]

[1]Magister of Industrial Engineering,
Mercubuana University, Jakarta.
[1]General Bureau and Procurement of goods and services,
Ministry of Education, Culture, Research, and Technology, Jakarta.
[2]Magister of Industrial Engineering,Mercubuana
University, Jakarta
Corresponding author: Sugiyono

Abstract

Direct procurement management information system(Sistem informasi manajemenpengadaan langsung-SIMPeL) is an information system for carrying out direct procurement at the Ministry of Education, Culture, Research, and Technology. However, its implementation is not yet maximized. Thepurposeof this research are to identify the inhibiting for SIMPeL implementation.This research uses survey methods with human, organization, and technology framework, data analysis using PLS-SEM, and root cause analysis. The novelty of this research is adding indicators of governance index, bureaucratic reform, and root cause analysis to identify the inhibiting factors. As a result, the inhibiting factors for SIMPeL implementation were identified: first, technological factors; SIMPeL is not yet integrated with the electronic procurement system, account uniqueness and reliability are lacking, features are not working optimally, and incomplete templates. Second, human factors; lack of peer support and reluctance always to use SIMPeL. Third, organizational factors; the functional assignment of good and services procurement (Jabatan Fungsional Pengelola Pengadaan Barang dan Jasa-JF PPBJ) reached one-third of the total and lack of leadership support**.**

Keywords: SIMPeL, Direct Procurement Information System; Human Organization and Technology; Root Cause Analysis.

1. Introduction

Every government agency continues to carry out bureaucratic reforms to improve performance in order to create good governance. Bureaucratic reform is a government policy priority to realize good governance by encouraging the acceleration to improve efficient and transparent government administration in public services (Turner et al., 2019). The Ministry of Education, Culture, Research, and Technology has transformed in the field of procurement of goods and services by digitizing direct procurement using the Direct Procurement Management System (Sistèm Manajemen Pengadaan Langsung-SIMPeL).

The transformation of government organizations is marked by a change from the old design which was less conducive to a new design which is more conducive by continuing to develop innovation, managing innovation, risk and organizational integration (Hidayat et al., 2022). Utilization of information technology to facilitate the management of business processes, good decisions made, and improve organizational performance(Noval, 2020).Adopting a technology will provide a massive change in productive interaction for employees, with the new technology becoming the standard of quality for organizations (Darmawi & Darsono, 2018).

Various obstacles are still found in the development of e-government in Indonesia, including minimal ICT infrastructure, inadequate human resources, citizens not used to using e-government, and an unsupportive environment(Sabani et al., 2019). In addition,frequently online procurement systems are inaccessible due to hurdles created by different hardware and lack of ability of users to use IT tools(Yosie Malinda, 2018).

Likewise, the implementation of SIMPeL at the Ministry of Education, Culture, Research, and Technology in the last 3 (three) years, although it has consistently increased, has not been optimal compared to the general procurement plan. The number of packages using SIMPeL has only reached one-third of the planned direct procurement packages. This condition indicates obstacles to implementing SIMPeL, so efforts are needed to understand barriers and critical success factors that will support the development of a solid and inclusive strategy for successful program implementation (Al-Ruithe & Benkhelifa, 2017).

The purpose of this research to identify the inhibiting factors for SIMPeL implementation. The novelty of this study is adding indicators

of governance index, bureaucratic reform to the human, organization, and technology framework to identify the inhibiting factors of SIMPeL implementation and using root cause analysis to obtain recommendations for appropriate improvements.

2. Literature Review.

2.1 E-Procurement.

E-procurement is a web-based procurement that automates supply chain communications, transactions, and collaboration with partners to increase collaboration, streamline processes, control costs, improve information exchange within the organization (Aberdeen, 2017). Procurement of goods and services which are implemented using the internet networks is known as e-procurement (Rashid & Uddin, 2021). Direct electronic procurement is direct procurement carried out through a direct procurement management information system(Kemendikbud, 2018).

Research on the use of SIMPeL at the Ministry of Finance offices in East Java by (Krisdiantoro et al., 2018)stated that several important factors determine the success of information, namely system quality, information quality, the intensity of use, and net benefits. Research (Ashari & Sukri, 2019) found factors that affect SIMPeL implementation, are performance expectancy, effort expectancy, level of interest in using the application (behavioral intention), and facilitating conditions.

The determining factors forimplementinge-procurement in Thailand are the information technology and supply performance, user acceptance, finance and procurement systems, and top management support. The Thailand top management of organizations does not yet understand the benefits of implementing e-procurement(Kunnapapdeelert & Thepmongkorn, 2017). The obstacles for e-procurement implementation at the Ministry of Transport, Infrastructure, Housing and Urban Development in Nairobi, Kenya, namely inadequate legal frameworks, data security, lack of technological infrastructure and the reluctance of organizational management to switch from paper-based transactions to transactional platforms (Githinji & Were, 2018).

The Barriers to implementing e-procurement in the Ghana public sector that employee competency, inadequate legal framework, inadequate technological infrastructure and security of procurement transaction data (Addo, 2019). Research (Gascó et al., 2018) found

the determinants and barriers to e-procurement adoption in the European Union from internal aspects: organizational namely slack resources, organizational culture, and resistance to change, and leadership support; individual namely lack of clarity about the project; and technological factors namely technological readiness, lack of connectivity.

The World Bank report cited (Anthony, 2018) the slow implementation of e-procurement in Africa; first, the government's slow to place human resources; second, the lack of information technology infrastructure; and lastly, the culture of government administration is still old-fashioned. Inadequate internet technology and connectivity, and limitations of small and local providers are the main challenges to implementing e-procurement in Ghana (Iddrisu, 2019).

Research (Saidu et al., 2020) on a project by The Federal Capital Territory Administration, Abuja, Nigeria, found barriers to implementing e-procurement: low technical expertise, unstable electricity supply, lack of government support, poor ICT and internet infrastructure, and costs. (Mohungoo et al., 2020) identified three challenges in using e-procurement: e-procurement technology and technical issues, organization of stakeholder issues, leadership, inadequate training, and unskilled personnel. Research (Belisari et al., 2020) in Italy found the main obstacles: bureaucratic procedures, fear of digitization, they are afraid of insecure workflow because the information is stored and managed outside the server company, the length of the decision-making process, and bureaucratic rigidity, cultural aspects regarding the e-platform procurement as a barrier making the digital process more difficult. Organizational, technological, legal, and security barriers; and culture (Yevu et al., 2021).

2.2 Human, Organization, Technology

DeLone and McLean (1992) developed a model for evaluating the quality of information systems (IS) with dimensions: system quality, information quality, usage, user satisfaction, individual impact, and organizational impact(Erlirianto et al., 2017). (DeLone & McLean, 2003) refined the model by adding service quality and substituting individual and organizational impacts with net benefits. According to (Yusof et al., 2006), the HOT-Fit model has three aspects. Dimensions of system quality, information quality, and service quality on the technological aspect. The human aspect consists

of the dimensions of system use and user satisfaction. Structural and environmental dimensions on organizational aspects.

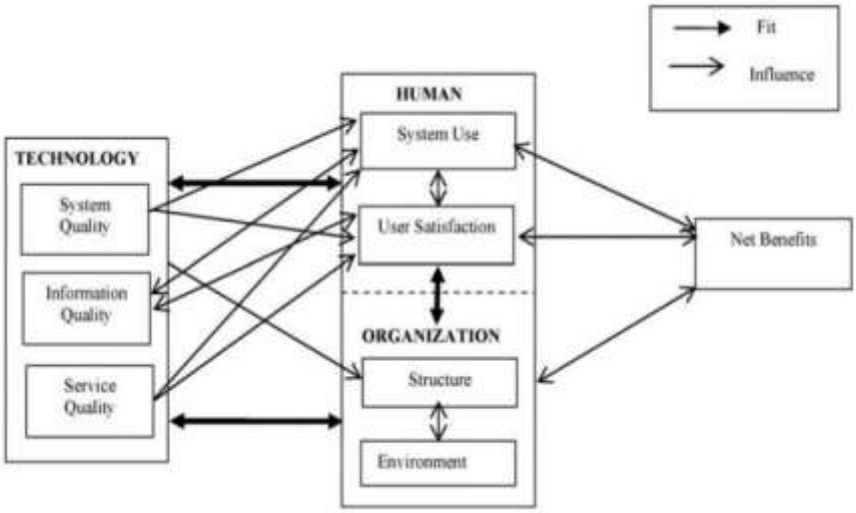

Figure 1. Yusof et al.'s HOT-Fit framework

2.3. Structural Equation Modeling (SEM)

Structural Equation Modeling (SEM) model is the second generation of multivariate analysis techniques that allow researchers to examine complex relationships between variables both recursive and non-recursive to obtain a comprehensive picture of the entire modelGhozali in (Haryono, 2016). The latent variable relationship model in Partial Least Square (PLS)consists of three types of measurements, namely: inner model which specifies the relationship between latent variables, outer model which specifies the relationship between latent variables and their indicators which defines how each indicator block relates to the latent variable it forms, and weight relation, which is the estimated value of the latent variable.

2.4. Root Cause Analysis (RCA)

One of the goals of the RCA process is to reduce the rate of similar incidents (Hibbert et al., 2018). To do so requires the investigator to look at the solution to the immediate problem and understand the underlying causes and remedy it. This involves identifying and managing processes, procedures, activities, inactivity, behaviors or conditions (BRC Global Standards, 2012).

Root cause analysis (RCA) using Fishbone diagrams. According to (Abdulai et al., 2020) a fishbone diagram shows various causes of a problem visually helps identify the causes of a problem and allows users to quickly categorize ideas into themes for further analysis or data collection. The design of the Ishikawa diagram is that the basic problem/effect is placed on the right side of the head of the fishbone frame. Factors that may influence the cause and/or need are identified, and each reason is grouped around the main cause category it affects are described as the bones of the main backbone. Categories that are often used as a starting point include materials, machines, manpower, methods, environment, and measurement.

3. Methodology

This research is mixed-methods research using a survey method with a human, organization, and technology–fit (HOT-fit) framework. The sample was selected using the non-probability sampling method. This sampling technique does not provide equal opportunities for each member of the population to be selected as a sample using a purposive sampling technique with certain criteria(Syam'unet al., 2022). The operational research variables used can be seen in Table 1.

Table 1. Operational research variables

Variables	Dimension	Indicator
Human	System Usage	Reception
		Knowledge and skills
		Usage rate
		Hope of acceptance
	User Satisfaction	System facilities and features
		System quality
		flexibility
		Repeated use
Organization	Organizational Structure	Leadership
		Management Support
		Strategy
	Environment	Communication
		Relationships between organizations
Technology	System Quality	Ease of learning
		Ease of use
		Reliability

		Usability (function)
		Security
		System Integration
	Information Quality	Information Quality
		Reliability
		Completeness
		data accuracy
		Punctuality

Variables	Dimension	Indicator
	Quality of Service	User guide
		responsiveness
		Empathy
		Follow up service
Net Benefits	Benefits	Ease of work
		Effectiveness
		Productivity
		Work performance
		Employee career development
		Efficiency
		Transparency
		Legitimacy or public trust
		Performance Organization
		Governance Index
		Bureaucratic Reform

3. Data Processing and Analysis

Respondents filled a questionnaire using Google Forms in October 2022. From the questionnaires collected, the characteristics of the respondents were based on position; 38.16% were commitment officers (Pejabat Pembuat Komitmen-PPK), while 61.84% were procurement officers (Pejabat Pengadaan-PP), shown in Figure 2.

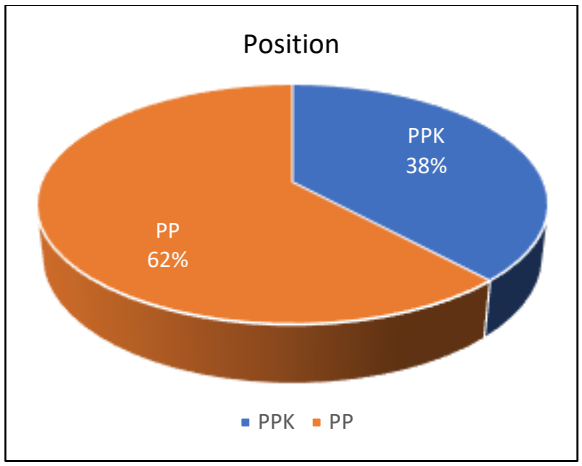

Figure 2. Respondent based on position

Based on the experience of using SIMPeL, 27.63% have used SIMPeL for more than 3 years, 27.63% between 2-3 years, 31.58% between 1-2 years, and the remaining 13.16% have used it for less than 1 year, shown Figure 3.

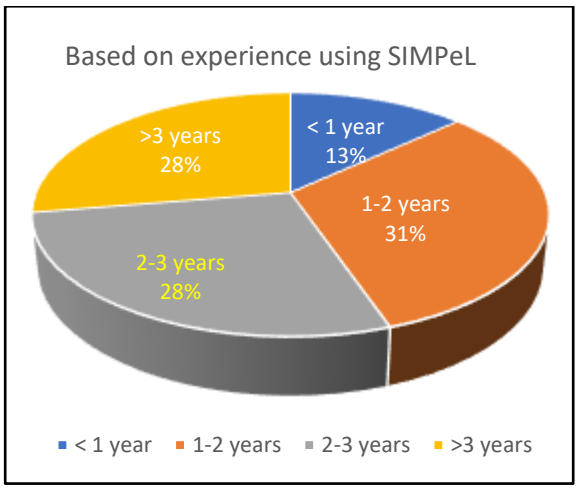

Figure 3. Respondent based on experience using SIMPeL

Completely general data of respondents is shown in Table 2.

Data analysisusing Partial Least Square-Structural Equation Modeling (PLS-SEM) with SmartPLS software.

The measurement model proposed in this study is shown in Figure 4.

Table 2. General data of respondents

Description	Indicator	Respondents	Percentage
Gender	Male	62	81.58%
	Female	14	18.42%
Educational level	Bachelor	40	52.63%

	Masters	36	47.37%
Functional position	First Expert	14	18.42%
	Young Expert	52	68.42%
	Associate	10	13.16%
Position	PPK	29	38.16%
	PP	47	61.84%
Experience using	< 1 year	10	13.16%
	1-2 years	24	31.58%
	2-3 years	21	27.63%
	>3 years	21	27.63%
Age	20-30 years	1	1.32%
	31-40 years	14	18.42%
	41-50 years	36	47.37%
	> 50 years	25	32.89%
Number of Packages	0-25%	16	21.05%
	26-50%	18	23.68%
	51-75%	18	23.68%
	76-100%	24	31.58%
Number of Respondents		76	100.00%

Source: Processed data (2022)

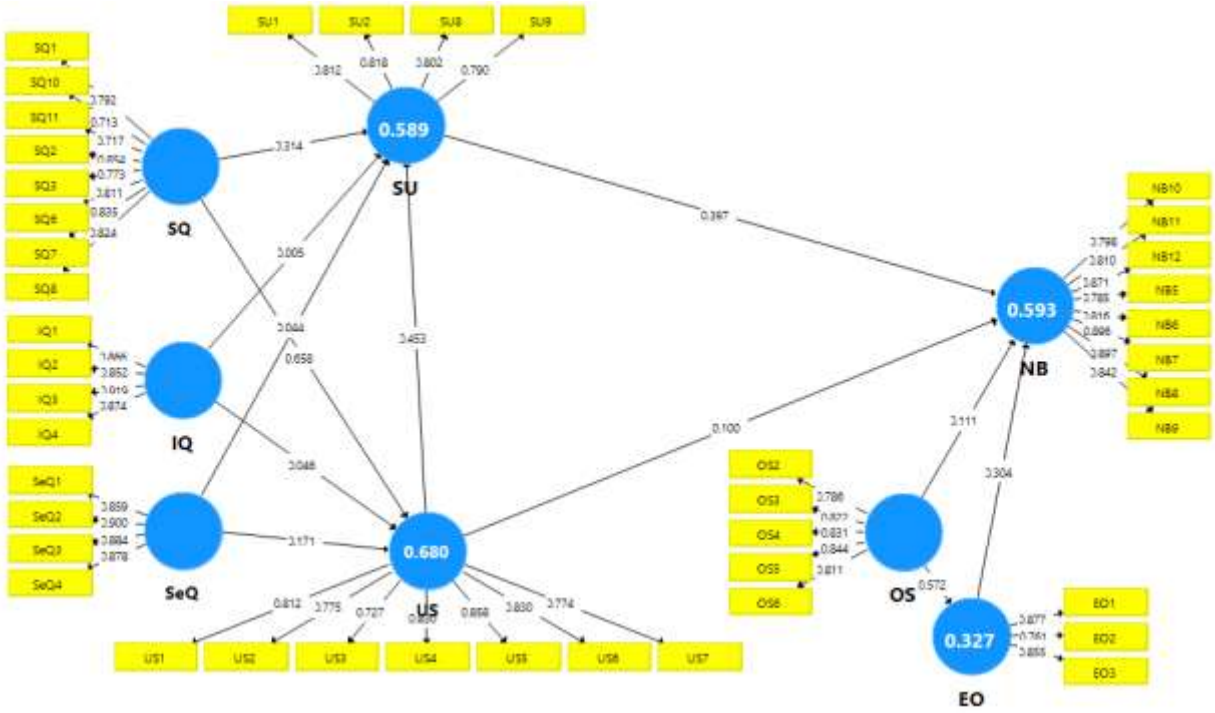

Figure 4. Outer Model

Evaluation of the Measurement Model (Outer Model).

Evaluation of the outer model ensures that the indicators used are valid and reliable. The Smart PLS Algorithm Output; has indicators whose outer-loading value is <0.4. These indicators are permanently eliminated, while indicators with values between 0.4 – 0.7 are considered for further analysis after the construct has outer-loading values < 0.4 eliminated. There is an increase in the outer-loading value, and if it exceeds the threshold > 0.7 indicator is to be maintained. However, when the outer loading value remains less than 0.7, constructs are considered to be eliminated (Hair et al., 2017).

Furthermore, internal consistency reliability measure reliability based on the intercorrelation of the studied indicator variables. Internal consistency reliability can be seen from Cronbach's alpha and Composite Reliability values. Cronbach's alpha becomes the lower limit, and composite reliability is the upper limit of internal consistency reliability. Cronbach's alpha and Composite Reliability values are presented in Table 3.

Table 3.Cronbach's alpha value and composite reliability

	Cronbach's alpha	**Composite reliability**
SQ	0.914	0.930
IQ	0.902	0.931
SeQ	0.903	0.932
SU	0.820	0.881
US	0.907	0.926
OS	0.878	0.911
OE	0.784	0.871
NB	0.940	0.950

Source: SmartPLS Algorithm Outputs, (2022)

All dimensions have a Cronbach's alpha value and composite reliability above 0.7, so it can be said to meet internal consistency reliability.Convergent validity, based on the average variance extracted (AVE) value, is said to be valid if the AVE value is more than 0.5 (Hair et al., 2017). The AVE value is presented in Table 4.

Table 4.average variance extracted (AVE) values

	The average variance extracted(AVE)	Description
SQ	0.626	Valid
IQ	0.771	Valid
SeQ	0.775	Valid
SU	0.649	Valid
US	0.643	Valid
OS	0.671	Valid
OE	0.693	Valid
NB	0.706	Valid

Source: SmartPLS Algorithm Outputs, (2022)

Discriminant validity that determined based on the cross-loading value. The cross-loading values of all indicators have a more significant correlation coefficient with each construct than the correlation coefficient values of the construct in the construct blocks in the other columns so that all constructs can be said to meet the discriminant validity test. The cross-loading value is shown in Table 5.

Table 5. Cross loading values

	SQ	IQ	SeQ	SU	US	OS	OE	NB
SQ1	**0.792**	0.512	0.471	0.481	0.642	0.393	0.302	0.467
SQ2	**0.854**	0.573	0.599	0.506	0.652	0.338	0.306	0.513
SQ3	**0.773**	0.567	0.532	0.517	0.704	0.382	0.380	0.474
SQ6	**0.811**	0.518	0.595	0.650	0.663	0.396	0.428	0.547
SQ7	**0.835**	0.495	0.527	0.628	0.641	0.336	0.325	0.520
SQ8	**0.824**	0.644	0.668	0.704	0.727	0.375	0.530	0.633
SQ10	**0.713**	0.657	0.657	0.522	0.633	0.385	0.508	0.573
SQ11	**0.717**	0.476	0.476	0.480	0.428	0.339	0.353	0.529
IQ1	0.660	**0.866**	0.650	0.385	0.492	0.421	0.421	0.518
IQ2	0.571	**0.852**	0.634	0.433	0.509	0.368	0.411	0.507
IQ3	0.628	**0.919**	0.725	0.566	0.635	0.374	0.448	0.616
IQ4	0.657	**0.874**	0.735	0.542	0.620	0.354	0.442	0.555
SeQ1	0.701	0.723	**0.859**	0.575	0.672	0.430	0.409	0.620
SeQ 2	0.649	0.704	**0.900**	0.476	0.595	0.279	0.396	0.592
SeQ 3	0.594	0.713	**0.884**	0.477	0.561	0.261	0.508	0.613

SeQ 4	0.573	0.616	**0.878**	0.505	0.549	0.284	0.462	0.561
SU1	0.512	0.371	0.399	**0.812**	0.560	0.349	0.327	0.540
SU2	0.578	0.416	0.367	**0.818**	0.560	0.387	0.410	0.594
SU8	0.581	0.519	0.561	**0.802**	0.668	0.315	0.527	0.573
SU9	0.634	0.483	0.536	**0.790**	0.593	0.383	0.622	0.545
US1	0.612	0.555	0.519	0.570	**0.812**	0.433	0.359	0.510
US2	0.602	0.588	0.559	0.593	**0.775**	0.465	0.416	0.476
US3	0.500	0.525	0.563	0.540	**0.727**	0.286	0.426	0.489
US4	0.800	0.549	0.600	0.604	**0.830**	0.429	0.440	0.531
US5	0.655	0.518	0.557	0.621	**0.858**	0.355	0.453	0.479
US6	0.684	0.501	0.548	0.594	**0.830**	0.444	0.415	0.494
US7	0.681	0.417	0.467	0.636	**0.774**	0.338	0.314	0.397
OS2	0.408	0.397	0.298	0.396	0.447	**0.786**	0.451	0.361
OS3	0.415	0.334	0.271	0.478	0.380	**0.822**	0.494	0.505
OS4	0.312	0.250	0.227	0.262	0.328	**0.831**	0.467	0.312
OS5	0.326	0.308	0.243	0.345	0.384	**0.844**	0.542	0.423
OS6	0.443	0.472	0.455	0.316	0.480	**0.811**	0.374	0.467
	SQ	IQ	SeQ	SU	US	OS	OE	NB
OE1	0.447	0.445	0.412	0.491	0.417	0.621	**0.877**	0.629
OE2	0.317	0.298	0.326	0.507	0.363	0.310	**0.761**	0.423
OE3	0.464	0.458	0.508	0.495	0.476	0.432	**0.855**	0.540
NB5	0.541	0.496	0.518	0.535	0.533	0.543	0.527	**0.785**
NB6	0.538	0.600	0.560	0.562	0.461	0.419	0.539	**0.816**
NB7	0.617	0.633	0.598	0.582	0.532	0.416	0.535	**0.896**
NB8	0.638	0.577	0.608	0.657	0.581	0.434	0.552	**0.897**
NB9	0.614	0.535	0.570	0.640	0.492	0.493	0.554	**0.842**
NB10	0.456	0.511	0.564	0.587	0.397	0.364	0.719	**0.798**
NB11	0.503	0.404	0.575	0.545	0.465	0.392	0.479	**0.810**
NB12	0.616	0.456	0.568	0.576	0.584	0.362	0.447	**0.871**

Source: SmartPLS Algorithm Outputs, (2022

Based on the cross-loading values in Table 5. it can be concluded that all indicators have a greater correlation coefficient with each construct compared to the indicator correlation coefficient values in

the construct block in the other column so that all indicators can be said to meet the discriminant validity test.

Evaluation of the Structural Model (Inner Model)

Evaluating the structural model by looking at the significance of the relationship between constructs is indicated by the statistical values obtained from the bootstrapping process(Sugiyono, 2017). The magnitude of the influence between constructs and interaction effects (moderation) is measured by the path coefficient value (path coefficient). Path coefficients with a T-statistic ≥ 1.96 or having a P-value ≤ 0.05 are declared significant. The path coefficient, T-statistic, and P-value values can be seen in Table 6.

Table 6. Path Coeffisien Values

	Original Sample (O)	T-Statistics	P-Values
SQ → SU	0.314	2.287	0.023
SQ → US	0.658	6.349	0.000
IQ → SU	0.005	0.043	0.966
IQ→ US	0.046	0.422	0.673
SeQ → SU	0.044	0.361	0.719
SeQ → US	0.171	1.346	0.572
US → SU	0.453	3.444	0.001
SU → NB	0.397	2.976	0.003
US → NB	0.100	0.652	0.515
OS → OE	0.572	7.961	0.000
OS → NB	0.111	0.827	0.408
OE → NB	0.304	3.374	0.001

Source: SmartPLS Algorithm Outputs, (2022)

According to (Hair et al., 2017), the path coefficient value measures the hypothetical relationship between the constructs. The path coefficient value has common values of -1 and +1 (values can be smaller/larger but are usually between these limits). Path coefficient values close to +1 represent a strong positive relationship, and values relative to -1 represent a robust negative relationship. It is almost certain that the relationship is statistically significant when the value is close to -1 or +1. The closer to the value 0, the weaker the relationship between the constructs, and the relationship is not

statistically significant. Evaluate the structural model with the coefficient of determination (R^2). This value measures how accurately our model's exogenous constructs predict endogenous constructs. R^2 values range from 0 to 1; the higher the value, the more accurate the prediction. The R^2 value of the model is shown in Table 7.

Table 7. R^2 values

	R Square	R Square Adjusted
SU	0.589	0.566
US	0.680	0.667
OE	0.327	0.318
NB	0.593	0.570

Source: SmartPLS Algorithm Outputs, (2022)

Refer to Table 7. the R^2 value for user satisfaction (US) is 0.680, indicating that the constructs of system quality, information quality, and service quality affect SIMPel user satisfaction by 68% while the rest (32%) is there are variables outside of this study that affects. Furthermore, the benefits (NB) of 0.593 means that the benefits obtained from direct procurement using SIMPeL are influenced by system use, user satisfaction, organizational structure, and the organizational environment by 59.3%, the remaining 40.7% is influenced by other variables not included in this research. System usage (SU) has an R^2 value of 0.589 which means that the constructs of system quality, information quality, and service quality affect system use by 58.9%, and the remaining 41.1% are there are variables outside of this study that affects. Organizational environment (OE) of 0.327 means that organizational structure (OS) and organizational environmental constructs only provide an influence of 32.7%.

Hypothesis test

The results of testing the 12 hypothesis proposed in this study, namely 6 hypothesis were accepted and the others were rejected, as shown in Table 8.

Table 8. Hypothesis testing results

Hypothesis		Results
H1	System quality has a positive effect on system use	Accepted
H2	System quality has a positive effect on user satisfaction	Accepted

H3	The information quality has a positive effect on system use	Rejected
H4	The information quality has a positive effect onuser satisfaction	Rejected
H5	Service quality has a positive effect on system use	Rejected
H6	Service quality has a positive effect on user satisfaction	Rejected
H7	User satisfactionhas a positive effect on system use	Accepted
Hypothesis		**Results**
H8	System usehas a positive effect on net benefit	Accepted
H9	User satisfactionhas a positive effect on net benefit	Rejected
H10	Organizational structure has a positive effect on the organizational environment	Accepted
H11	Organizational structure has a positive effect on net benefit	Rejected
H12	The organizational environmenthas a positive effect on the net benefit	Accepted

4. Finding and Discussion

The finding of this research, system quality has a significant effect on system use and user satisfaction, while information quality and service quality have no significant effect. User satisfaction has a significant effect on system use but does not have a significant effect on benefits. User satisfaction affects the benefits mediated by the system use. The system use has a significant effect on benefits. Organizational structure has a significant effect on the organizational environment but does not have a significant effect on benefits. The organizational structure affects the benefits mediated by the organizational environment. The organizational environment has a significant effect on benefits.

4.1 System quality has a positive effect on system use and user satisfaction

System quality is proven to significantly affect system use and user satisfaction. These results confirm the success model (DeLone & McLean, 2003) the better the quality of a system will increase user satisfaction and the intensity of use. These results are in accordance with the studies (Krisbiantoro et al., 2015), (Sari et al., 2020), (Puspita et al., 2020), and (Krisdiantoro et al., 2018) that the quality of the SIMPeL system will affect the intensity of system use and can provide benefits for improving individual performance and organizational

performance. The higher the quality of the system, the higher the user satisfaction (Setyawanto et al., 2022).

4.2 Information quality has a positive effect on system use and user satisfaction

Informationquality has a positive effect on system use and user satisfaction is rejected. These results do not confirm the success model (DeLone & McLean, 2003), information quality has a significant effect on system use and user satisfaction. These results show similarities with research (Oktavia et al., 2016), (Akbar & Mukhtar, 2019), (Agustini et al., 2020) and (Krisdiantoro et al., 2018) which state that information systems are mandatory, quality information or report output from a system is not the most important thing that affects the intensity of system use and user satisfaction. According to Budiyanto (2009) in (Oktavia et al., 2016) the good quality of information which is reflected in the completeness of the report output actually confuses system users which makes them reluctant to use the information system.

4.3 Service quality has a positive effect on system use and user satisfaction

Service quality has a positive effect on system use and user satisfaction are rejected. These results do not confirm the success model (DeLone & McLean, 2003), (Krisbiantoro et al., 2015), (Suandari et al., 2019), (Lusiana, 2020), and (Sari et al., 2020) service quality will affect system use and user satisfaction. These results confirm research (Perwira, 2017) found that the service quality in the e-learning information system has no significant effect on system use because users prioritize system reliability. The more reliable the system, the more users will be interested. In line with (Setyawanto et al., 2022) service quality which has not influence on user satisfaction.

4.4 User satisfaction has a positive effect on system use

User satisfaction is proven to have a positive effect on system use. These results confirm the success model (DeLone & McLean, 2003), (Krisbiantoro et al., 2015), (Azwar & Amriani, 2016), (Perwira, 2017), and (Sari et al., 2020)stating the use of a system of obtaining positive experience will lead to user satisfaction. An increase in user satisfaction will lead to an increase in intention to use, and thus will increase the system use. User satisfaction encourages them to return to using SIMPeL in carrying out direct procurement.

4.5 Organizational structure has a positive effect on the organizational environment

Organizational structure is proven to have a positive effect on the organizational environment. The results of this study confirm the success model of Delone and Mclean which was updated by (Yusof et al., 2006), (Krisbiantoro et al., 2015), (Perwira, 2017), (Setyawanto et al., 2022), (Deharja et al., 2020), and (Erlirianto et al., 2017) stated that management supports system implementation by making policies and implementing appropriate strategies based on the environment in the organization.

4.6 User satisfaction and organizational structure have a positive effect on benefits

User satisfaction andorganizational structure has a positive effect on benefits, rejected. These results do not confirm the success model (DeLone & McLean, 2003), (Yusof et al., 2006) user satisfaction affects net benefits. These results confirm research (Susilo & Mustofa, 2019) found that the existing SIMRS is not in accordance with the wishes and functions of SIMRS, namely easy to use, and supports daily tasks in improving hospital service performance. User satisfaction in using SIMPeL does not have a positive effect on benefits. This is because SIMPeL is mandatory so they inevitably have to use it in carrying out direct procurement. The results of the study (Perwira, 2017) found that organizational structure has no positive effect on benefits. This is due to the lack of realorganizational support for users. Organizational support is a weak predictor of net benefits (Agustini et al., 2020).

4.7 System use and organizational environment have a positive effect on benefits

System use and organizational environment are proven to have a positive effect on benefits. The results of this study confirm the success model (DeLone & McLean, 2003), (Yusof et al., 2006), (Krisbiantoro et al., 2015), (Azwar & Amriani, 2016), (Perwira, 2017), and (Setyawanto et al., 2022) stating the system use and organizational environment affects the benefits. If the user gets a positive net benefit, it will increase use. Conversely, if the net benefits are negative, it will lead to a decrease in use and possible termination of the system. Staff cohesiveness, support between colleagues, regular use of SIMRS were factors driving the use of SIMRS (Susilo & Mustofa, 2019). Good communication between supervisors and colleagues is needed, especially when errors occur and there are

problems with data entry (Sari et al., 2020), (Yuliusman et al., 2020), (Agustin Widiastuti & Gunani Partiwi, 2021), (Kodoati & Hartomo, 2022).

A high level of system users can have a positive influence on the achievement of individual performance of working group members in the form of faster completion of goods/services procurement tasks, increased work performance and increased productivity, and higher procurement realization. work performance and productivity of procurement officers increased along with the increasing number of direct procurement packages using SIMPeL.

Root Cause Analysis (RCA) steps

1. Define the non-conformity.

System quality affects user satisfaction and system use. The organizational structure affects the organizational environment and benefits are mediated by the organizational environment. System use is influenced by user satisfaction and system quality. Necessary to explore user satisfaction, system use, structure and organizational environment that are not maximized to increase benefits and finally increase the use of SIMPeL.

2. Investigate the root cause.

Based on the indications of the problems, the root causes of the use of SIMPeL were not maximized, as shown in Figure 5.

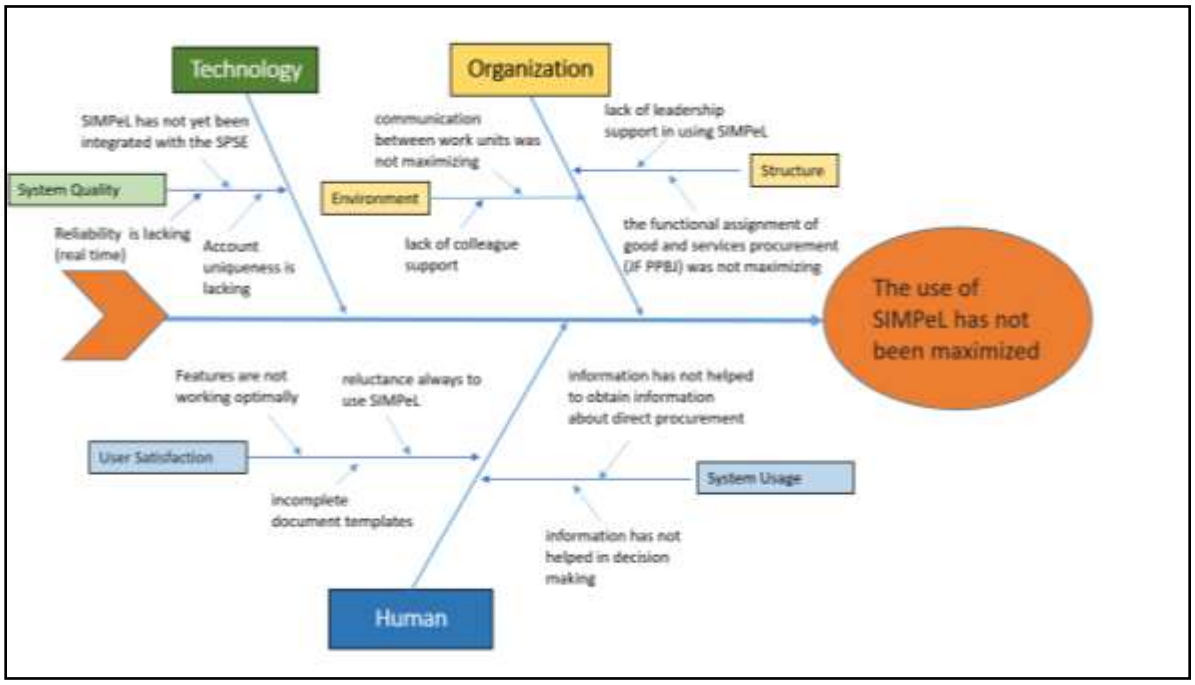

Figure 5. The Fishbone diagram of the root causes of the use of SIMPeL is not maximized.

5. Conclusion

The inhibiting factors of SIMPeL implementation at the Ministry of Education, Culture, Research, and Technology are as follows:
The first is the technology factors; SIMPeL has not yet been "integrated with the electronic procurement system (Sistem Pengadaan Secara Elektronik-SPSE), account uniqueness and reliability (real-time) are lacking, features are not working optimally, and incomplete document templates.

The second is organizational factors; lack of colleague support, the functional assignment of good and services procurement (JF PPBJ) only reached one-third of the total, communication between work units was not maximizing, and lack of leadership support in using SIMPeL.

The third is human factors; information has not helped to obtain information about direct procurement, data/information has not helped in decision making, and reluctance always to use SIMPeL

This research has limitations:

This research has limitations namely respondents who were the research subjects were JF PPBJ personnel so the results of this study did not describe the constraints experienced by all SIMPeL users, the

R Square value for the organizational environment in this research model is relatively low. This shows that there are still many exogenous variables that affect the organizational environment that is not included in this study. Suggestions for future research can use other variables, such as legal and regulatory aspects of procurement, investment costs, or continuous improvement strategies to maximize the implementation of SIMPeL.

References

Abdulai, M. N., Prah, J. K., Walker, E., & Afrifa, A. D. (2020). A Fishbone Analysis of the Use of Electronic Health Records (EHR) in a Primary Healthcare Setting: The Case of University of Cape Coast Hospital. International Journal of Applied Information Systems (IJAIS), 12(33), 27–31. https://doi.org/10.5120/ijais2020451882

Aberdeen. (2017). Best Practices in E-Procurement (Issue March). chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.cosmo-one.gr/educommerce/wp-content/img/en2_1.pdf

Addo, S. K. (2019). Challenges of E-Procurement Adoption in the Ghana Public Sector A Survey of in the Ministry of Finance. Dama Academic Scholarly & Scientific Research Society, 1(7), 44–80. https://doi.org/10.15373/22501991

Agustin Widiastuti, N., & Gunani Partiwi, S. (2021). Evaluation of Human Resource Information System by Using HOT-Fit Model. IPTEK Journal of Proceedings Series, 0(3), 31. https://doi.org/10.12962/j23546026.y2020i3.11073

Agustini, K., Darmawiguna, I. G. M., Artayasa, I. K. D., & Mertayasa, I. N. E. (2020). Evaluation of the teachers' acceptance to E-report card applications with the hot-fit model approach. International Journal of Instruction, 13(3), 475–490. https://doi.org/10.29333/iji.2020.13333a

Akbar, R., & Mukhtar, M. (2019). Evaluasi e-Tracer Study menggunakan HOT (Human-Organization-Technology) Fit Model. Jurnal JTIK (Jurnal Teknologi Informasi Dan Komunikasi), 3(2), 46. https://doi.org/10.35870/jtik.v3i2.86

Al-Ruithe, M., & Benkhelifa, E. (2017). Analysis and Classification of Barriers and Critical Success Factors for Implementing a Cloud Data Governance Strategy. Procedia Computer Science, 113, 223–232. https://doi.org/10.1016/j.procs.2017.08.352

Anthony, A. (2018). The Use of E-procurement in South African Public Procurement Law: Challenges and Prospects. Law, Democracy & Development, 22(1), 39–47. https://doi.org/10.4314/ldd.v22i1.4

Ashari, H., & Sukri, R. (2019). Analisis Penerimaan Penggunaan Sistem Informasi Manajemen Pengadaan Langsung (SIMPeL) Pada Kementerian Keuangan. Jurnal Wacana Kinerja: Kajian Praktis-Akademis Kinerja Dan Administrasi Pelayanan Publik, 22(1), 79. https://doi.org/10.31845/jwk.v22i1.136

Azwar, & Amriani, T. N. (2016). Pengujian Empiris Model DeLone And McLean Pada Sistem Pengadaan Barang/Jasa Secara Elektronik (Studi Kementerian Keuangan). Https://Medium.Com/. https://ssrn.com/abstract=2850229

Belisari, S., Binci, D., & Appolloni, A. (2020). E-procurement adoption: A case study about the role of two Italian advisory services. Sustainability (Switzerland), 12(18), 1–18. https://doi.org/10.3390/SU12187476

BRC Global Standards. (2012). Understanding Root Cause Analysis. 24. http://www.brcglobalstandards.com/Portals/0/Books/Rootcause/rootcause.html

Darmawi, A., & Darsono, D. (2018). Pengaruh Variabel Peningkatan Produktivitas , Penguasaan Teknologi Baru dan Pelatihan Terhadap Pengendalian Mutu Terpadu Karyawan Pada Industri Tekstil dan Garmen di Surakarta. Jurnal Manajemen Industri Dan Logistik, 2(1), 03–14. https://doi.org/10.30988/jmil.v2i1.21

Deharja, A., Hargono, A., Santi, M. W., Nandini, N., & Damayanti, N. A. (2020). Evaluating the Usability of Hospital Information System (HIS) Through Human Organization Technology-Fit (Hot-Fit) Model. International Proceedings the 2nd International Scientific Meeting on Health Information Management (ISMoHIM) 2020, 5(1171), 380–389. https://publikasi.aptirmik.or.id/index.php/ismohim2020/article/view/160/157

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten Year Update. Journal of Management Information Systems/Spring, 19(2), 9–30.

Erlirianto, L. M., Ali, A. H. N., & Herdiyanti, A. (2017). The

Implementation of the Human, Organization, and Technology-Fit (HOT-Fit) Framework to Evaluate the Electronic Medical Record (EMR) System in a Hospital. Procedia Computer Science, 72, 580–587. https://doi.org/10.1016/j.procs.2015.12.166

Gascó, M., Cucciniello, M., Nasi, G., & Yuan, Q. (2018). Determinants and barriers of e-procurement: A European comparison of public sector experiences. Proceedings of the Annual Hawaii International Conference on System Sciences, 2018-Janua, 2342–2351. https://doi.org/10.24251/hicss.2018.294

Githinji, R. M., & Were, S. (2018). Challenges of Implementing E-Procurement in the Ministry of Transport, Infrastructure, Housing and Urban Development in Nairobi, Kenya. Journal of Procurement & Supply Chain, 2(1), 1–13. https://stratfordjournals.org/journals/index.php/journal-of-procurement-supply/article/view/114

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Thousand Oaks. In Sage. https://us.sagepub.com/en-us/nam/a-primer-on-partial-least-squares-structural-equation-modeling-pls-sem/book244583

Haryono, S. (2016). Metode SEM untuk Penelitian Manajemen dengan AMOS, LISREL, PLS. In Badan Penerbit PT. Intermedia Personalia Utama.

Hibbert, P. D., Thomas, M. J. W., Deakin, A., Runciman, W. B., Braithwaite, J., Lomax, S., Prescott, J., Gorrie, G., Szczygielski, A., Surwald, T., & Fraser, C. (2018). Are root cause analyses recommendations effective and sustainable? An observational study. International Journal for Quality in Health Care, 30(2), 124–131. https://doi.org/10.1093/intqhc/mzx181

Hidayat, S., Wirawan, I. B., Adam, S., Trisliatanto, D. A., & Abdullah, M. R. T. L. (2022). The Effect of Transformational Leadership on Employee Performance Through Organizational Citizenship Behavior in Industrial Revolution 4.0. Jurnal Manajemen Industri Dan Logistik, 6(1), 162–176. https://doi.org/10.30988/jmil.v6i1.1009

Iddrisu, G. (2019). Factors Affecting the Adoption and Implementation of the E-Procurement System In The Public Sector A Case Of Tamale Teaching Hospital. http://41.66.217.101/handle/123456789/2481

Kemendikbud. (2018). Peraturan Menteri Pendidikan dan Kebudayaan No 7 Th 2018 Tentang Pengadaan Langsung Secara Elektronik Di Lingkungan Kementerian Pendidikan dan Kebudayaan. https://jdih.kemdikbud.go.id/detail_peraturan?main=1922

Kodoati, K. S., & Hartomo, K. D. (2022). Evaluasi Keberhasilan F-Learn Menggunakan Human Organization Technology (HOT) Fit Model pada Universitas Kristen Satya Wacana. JATISI (Jurnal Teknik Informatika Dan Sistem Informasi), 9(3), 2096–2111. https://doi.org/10.35957/jatisi.v9i3.2201

Krisbiantoro, D., M.Suyanto, & Luthfi, E. taufiq. (2015). Evaluasi Keberhasilan Implementasi Sistem Informasi Dengan Pendekatan HOT FIT Model. Konferensi Nasional Sistem & Informatika, 5–10.

Krisdiantoro, Y., Subekti, I., & Prihatiningtias, Y. W. (2018). Pengaruh Kualitas Sistem Dan Kualitas Informasi. Jurnal Akuntansi Aktual, 5(2), 149–167. http://journal2.um.ac.id/index.php/jaa%0APENGARUH

Kunnapapdeelert, S., & Thepmongkorn, S. (2017). Empirical Study of e-Procurement Adoption in Thailand. International Journal of E-Education, e-Business, e-Management and e-Learning, 7(4), 246–254. https://doi.org/10.17706/ijeeee.2017.7.4.246-254

Lusiana, D. (2020). Pengaruh Human Organization Technologi (Hot) Fit Model Terhadap Evaluasi Sistem Informasi Akademik Dosen. JUSTINDO (Jurnal Sistem Dan Teknologi Informasi Indonesia), 5(1), 44–52. https://doi.org/10.32528/justindo.v5i1.3611

Mohungoo, I., Brown, I., & Kabanda, S. (2020). A Systematic Review of Implementation Challenges in Public E-Procurement. In ifif hal science: Vol. 12067 LNCS. Springer International Publishing. https://doi.org/10.1007/978-3-030-45002-1_5

Noval, M. (2020). Business Intelligence System for Evaluation of Widyaiswara Ministry of Religious Affairs Performance. Jurnal RESTI (Rekayasa Sistem Dan Teknologi Informasi), 4(5), 864–873. https://doi.org/10.29207/resti.v4i5.2236

Oktavia, D. D., Saraswati, E., & Baridwan, Z. (2016). Faktor-Faktor Yang Mempengaruhi Kesuksesan Sistem Informasi Manajemen Daerah Dengan Pendekatan Model Delone Dan Mclean yang Dimodifikasi. http://repository.ub.ac.id/id/eprint/160324

Perwira, R. I. (2017). Kesesuaian model Hot-FIT dala Sistem Informasi Elearning UPN "Veteran" Yogyakarta. Seminar Nasional Informatika, 1(September), 118–125.

Puspita, S. C., Supriyantoro, ., & Hasyim, . (2020). Analysis of Hospital Information System Implementation Using the Human-Organization-Technology (HOT) Fit Method: A Case Study Hospital in Indonesia. European Journal of Business and Management Research, 5(6), 1–8. https://doi.org/10.24018/ejbmr.2020.5.6.592

Rashid, M. A., & Uddin, M. S. (2021). Analysis of a Conceptual Model and Assessment of the e-Procurement System in Bangladesh. Journal of Computer and Communications, 09(11), 64–76. https://doi.org/10.4236/jcc.2021.911005

Sabani, A., Deng, H., & Thai, V. (2019). Evaluating the development of E-government in Indonesia. ACM International Conference Proceeding Series, 254–258. https://doi.org/10.1145/3305160.3305191

Saidu, I., Abubakar, M. I., Oke, A. A., & Alumbugu, P. O. (2020). 3. Implementation of E-Procurement in Public Building Projects of the Federal Capital Territory Administration Abuja. Environmental Technology & Science Journal, 11(2), 1–12. http://repository.futminna.edu.ng:8080/jspui/handle/123456789/9958

Sari, T. P., Hamzah, Z., Trisna, W. V., & Purwati, A. A. (2020). Human-Organization-Technology (HOT) analysis on the primary care application users. Revista ESPACIOS, 41(12), 6.

Setyawanto, M. B., Risky Niahastuningtyas, & Sugi Hayati. (2022). Penerapan Metode Human Organization Technology (HOT) Fit Model Untuk Evaluasi Implementasi Pelayanan Imunisasi Balita Di Lingkungan Rt 001/07 Desa Krukut Kecamatan Limo Kota Depok. Jurnal Teknik Informatika, 8(1), 37–44. https://doi.org/10.51998/jti.v8i1.452

Suandari, P. V. L., Adi, K., & Suryawati, C. (2019). Evaluasi Implementasi Radiology Information System Picture Archiving and Communication System (RISPACS) dengan Pendekatan Model HOT-FIT. Jurnal Sistem Informasi Bisnis, 9(1), 55. https://doi.org/10.21456/vol9iss1pp55-62

Sugiyono. (2017). Metode Penelitian Kualtitatif Kualitatif dan R&D

(25th ed.). ALFABETA.

Susilo, B. B. B., & Mustofa, K. (2019). Evaluasi Penerapan Sistem Informasi Manajemen Rumah Sakit (SIMRS) di RSUD Praya Kabupaten Lombok Tengah Nusa Tenggara Barat. Journal of Information Systems for Public Health, 4(1), 1–15. https://doi.org/https://doi.org/10.22146/jisph.41428

Syam'un Syam'un, Roymon Panjaitan, Andry Mochamad Ramdan, Dhiraj Kelly Sawlani, A., & Abdullah. (2022). The Role Of Market Performance Studies With A Strategic Orientation. Jurnal Manajemen Industri Dan Logistik, 6(2), 227–241.

Turner, M., Prasojo, E., & Sumarwono, R. (2019). The challenge of reforming big bureaucracy in Indonesia. Policy Studies, 43(2), 333–351. https://doi.org/10.1080/01442872.2019.1708301

Yevu, S. K., Yu, A. T. W., & Darko, A. (2021). Barriers to electronic procurement adoption in the construction industry: a systematic review and interrelationships. International Journal of Construction Management, 0(0), 1–15. https://doi.org/10.1080/15623599.2021.1946900

Yosie Malinda, S. H. (2018). Faktor Kendala Dominan Penggunaan E-Catalogue Pada Proses Pengadaan Proyek Konstruksi Jalan Dengan Metoda SPSS & RII. Rekayasa Sipil, 7(2), 90–105. https://doi.org/http://dx.doi.org/10.22441/jrs.2018.V07.i2.04

Yuliusman, Putra, W. E., Setiawan, D., Indrawijaya, S., Jaya, I., & Fitri, L. E. (2020). Evaluation of utilization of information systems in Jambi University perspective human organization technology (Hot) – fit framework. International Journal of Psychosocial Rehabilitation, 24(8), 2260–2270. https://doi.org/10.37200/IJPR/V24I8/PR280246

Yusof, M. M., Paul, R. J., & Stergioulas, L. K. (2006). Towards a framework for health information systems. Proceedings of the Annual Hawaii International Conference on System Sciences, 5(C), 1–10. https://doi.org/10.1109/HICSS.2006.491