

Obtaining Professional Skills in the Public Construction Procurement System: A Challenge from the Viewpoint of Indonesian Government Worker

Dwifitra Jumas^{1,2*}, Faizul Azli Mohd-Rahim³, Vivi Ariani², Arif Nurman Florisa⁴

¹Center for Construction Management and Quantity Surveying, Faculty of Civil Engineering and Planning, Universitas Bung Hatta, Indonesia

²Quantity Surveying, Faculty of Civil Engineering and Planning, Universitas Bung Hatta, Indonesia

³Quantity Surveying, Faculty of Built Environment, Universiti Malaya, Malaysia

⁴ Secretariat of Regional Government, Section of Procurement of Goods and Services, Pemda Pesisir Selatan, Indonesia

*Corresponding author: dwifitraj@bunghatta.ac.id

<https://doi.org/10.22452/jdbe.vol23no1.4>

Abstract

The lack of ASN (*Aparatur Sipil Negara/ State Civil Apparatus*) interest in participating in the procurement process is a problem that affects the performance of the procurement process in terms of its effectiveness and efficiency. Therefore, the purpose of this research is to identify and evaluate the factors that influence the difficulty of obtaining functional procurement from the viewpoint of various government workers authorized for procurement. This research used a quantitative approach with a questionnaire survey method for data collection. From the results of the literature study, 22 elements of the challenge to obtain procurement professionals were successfully identified. Questionnaires were distributed to ASN (public procurement officials), namely structural, functional and functional assistants working in the field of Procurement of Goods and Services within the West Sumatra provincial government. Furthermore, the data were analyzed using Exploratory Factor Analysis (EFA). As a result, there are three factors of the difficulty of obtaining functional procurement from the perspective of various ASN procurement managers, namely Standard and Policy Factors (6 variables), Transparency and Accountability Factors (4 variables), and Experience and Education Factors (2 variables). This research also suggests measuring the relationship between the three factors by means of confirmatory factor analysis for future research.

Keywords: *professionalism; public procurement; challenges*

1. INTRODUCTION

Meeting the need for professionalism in public procurement resources is a standard indicator of proficiency in the implementation of government procurement. The process for implementing procurement resources has not been optimally utilized. This affects the effectiveness and efficiency of the procurement process as measured by procurement performance. Hiring a procurement specialist will be very expensive and typically more difficult to complete for smaller procurement units, so financial status is a major factor. It is preferable if qualified procurement specialists can be involved in order to improve the efficiency of the procurement (Dimitri, 2013). This indicates that optimal and honorable procurement is supported by competitive and broad-minded public procurement resources.

Previous research on procurement of goods and services only emphasizes how the entire tender process can be completed according to the implementation plan, without regard to value for money (Musanzikwa, 2013; Komakech, 2016). The aspects of implementing resources and procurement management that are integrated and optimal have not been given much consideration. As a result, many public procurement resources have multiple positions. This difference is also compounded by changes in various regulations regarding the executors of goods and services procurement, which demand that the procurement system be continuously improved and enhanced. It is this non-optimal procurement process that causes the frequent occurrence of various cases and the criminalization of procurement due to the lack of risk mitigation for the implementation of the goods and services procurement process (Mahmood, 2010).

This research is essential since there are so many results of the procurement process that are not running optimally, because the human resources function that carries out the procurement itself has not gone well, so the allocated costs and budget are not effective and efficient. According to Wibowo (2019), the effect of increased professionalism in the field of goods and services procurement provides better efficiency in the proportion of absorption of the goods and services procurement budget carried out by the Goods and Services Procurement Work Unit (UKPBJ). In Indonesia, the Government Goods/Services Procurement Policy Institute (LKPP), a governmental organization in charge of

managing the procurement process, including implementing, developing, formulating, and establishing procurement rules, has developed various competency standards in increasing procurement resources. In fact, there has been no progress in increasing the professionalism of public procurement resources in recent years, both at central and regional government institutions, which is also driven by the failure to improve the procurement work unit's performance (Ilahiyyah et al., 2016).

Various outreach and assistance have been provided, but the professional element of public procurement has not been optimized and fulfilled in the form of a functional post for the manager of procurement of goods and services. There are still numerous ministries and local governmental institutions where the procurement of goods and services is still handled by the State Civil Apparatus (ASN) who have multiple positions with other main duties and do not yet have a competency certificate in procurement of goods and services.

2. LITERATURE REVIEW

2.1. Professional Skill in Procurement

Professionalism in the procurement of goods and services is often referred to as the Functional Position of Goods/ Services Procurement Manager (JF-PPBJ) which has the scope of duties, responsibilities, authorities and rights to carry out government goods/ services procurement activities in accordance with statutory provisions (Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi, 2020). Professionals in public procurement are subject to efficiency, transparency, and compliance standards as government employees, and have ethical and social obligations to general public (Zorzini et al., 2015; Erridge & McIlroy, 2002; Cooper et al., 2000; Giuniperio & Dawn, 2000).

The need for procurement professionals for the procurement of goods and services is a standard indicator of proficiency in the implementation of government procurement. Concha et al., (2012) stated that government e-procurement procurement is an essential adjustment required in government programs, but very few can reach this standard. The human resources department for procurement must

be competent in this area in order to complete the e-procurement procedure.

Procurement of goods/services is one of the Supply Chain Management (SCM) chains that regulate the movement of resources, especially towards Human Resource Management (HRM) in the context of public services with the aim of increasing trust and collaboration of various parties in the supply chain. Hohenstein et al. (2014) stated that the categories that influence the above include: a) skills, knowledge, and abilities, b) training and development, c) the impact of human resource management on performance, d) education and teaching, e) recruitment and recruiting, f) compensation and salary, g) global mindset.

2.2. Role of Public Procurement

Public procurement refers to the purchase, recruitment, or acquisition through contractual arrangements by the public sector or service after competition for product, service after competition for products, services, jobs, and other public supplies (Odhiambo & Kamau, 2003). The purchase of good and contracts for building work and services using funds from the state budget, local budgetary authorities, state foundation funds, domestic or foreign loans insured by the state, foreign aid, and income from the state's economic activities is also referred to as public procurement (Kamakech, 2016).

Public procurement is one of many government functions that has good potential to assist the government to achieve its objectives. Coggburn, (2003) emphasizes that if the procurement function fails to provide quality goods and services in a timely manner and at an economical price, the government's performance will obviously be disrupted. In fact, unstable contradictions between the public's expectation of accountability and openness, as well as efficiency and effectiveness in resource management, continue to be present in many public procurement systems in both developed and developing countries (Nurlukman, 2017; Mahmood, 2010). For this reason, good procurement is essential, namely free from corruption, promoting efficiency and effectiveness

by providing better services (Basheka & Kabatereine, 2013)

3. RESEARCH METHODOLOGY

This study adopted 22 variables that became a challenge in obtaining procurement professionals from several previous researchers as shown in Table 1. These variables are then used as statements in the questionnaire. Likert scale with five point's options was employed with 1 being strongly disagree and 5 being strongly agree.

In order to widely cover the distribution and number of respondents which could represent procurement officials in West Sumatera Region, a minimum number of 105 questionnaires must be collected (Hair dkk, 2010; Oke dkk, 2012). Moreover, Zahoor (2017) stated that 100 to 200 samples are sufficient if the measurement variables come from a fairly strong theory. The questioner sheets were distributed to public procurement officials, namely structural, functional and functional assistants in West Sumatra Province, including regencies/cities. The distribution of responders by work area is shown in Figure 1.

The Exploratory Factor Analysis (EFA) procedure begins with factor extraction using the Statistical Program for Social Science (SPSS) v.25. The calibration criteria used for factor extraction are eigen-value greater than 1, scree plot test to see the trend of variables towards eigen-value and Horn'n parallel analysis (HPA) (Zahoor et al., 2017). Furthermore, to measure the reliability and consistency of each factor, Cronbach's coefficient alpha score is suggested above 0.6.

Confirmatory Factor Analysis (CFA) is used to validate EFA results with the help of Structural Equation Modeling (SEM) using Smart Partial Least Square (PLS). This analysis assessed the relationships between items and latent variables (Hair et al., 2021) and presents the structural model representing the relationships between the constructs (Molenaar et al., 2000). The measurement model validation is shown in Figure 3.

Table 1. The challenge of obtaining procurement professionals in public procurement

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
X1 Lack of public trust in the procurement process	v	v											
X2 Ineffective and inefficient use of value for money in procurement process	v	v											
X3 Lack of compliance and policy consistency in the procurement process	v	v		v									
X4 The number of interventions in the procurement process		v											
X5 Transparency in the awarding of tenders			v										
X6 Unclear and non-standardized tender documents			v										
X7 Lack of providing equal opportunities for contractors in fulfilling the terms of the offer	v	v											
X8 Rules and procedures are not well defined and open to the public			v	v	v								
X9 Regulations are not formulated in a clear, consistent, comprehensive, and flexible way				v		v							
X1 Training and socialization of procurement regulations by the Procurement Work Unit is rarely carried out							v	v					
X1 The procurement work unit does not carry out the procedures and provisions listed in the procurement rules in practice						v			v				
X. Existing regulations are made unclear and inconsistent so that tender documents are not open transparently									v				
X1 Lack of education level to meet certification requirements										v	v		
X1 Lack of experience level in fulfilling certification requirements										v	v		
X1 Unfulfilled practice in the procurement process										v	v		
X1 Disagree with the established professional code of ethics										v			
X1 Fail to competency exam										v			v
X1 The workload and work pressure is too high												v	
X1 The career path is not ideal if it is not supported by the work unit													v
X2 The amount of honorarium with the duties, responsibilities and risks is not appropriate												v	
X2 There is no more incentive to encourage clean procurement												v	
X2 Procurement functional personnel allowance is still considered insufficient													v

Sources: 1. Schapper et al. (2006); 2. Neupane et al. (2012); 3 Basheka & Bisangabsaija (2009); 4. Mahmood (2010); 5. Bals et al. (2019); 6. Juliani & Sholihin (2014); 7. Yakovlev et al. (2015); 8. Basheka & Kabatereine (2013); 9. Nurharjanti (2017); 10. Prier et al. (2010); 11. Hohenstuijn (2014); 12. Hakim et al. (2014); 13. Ilahiyyah et al. (2016)

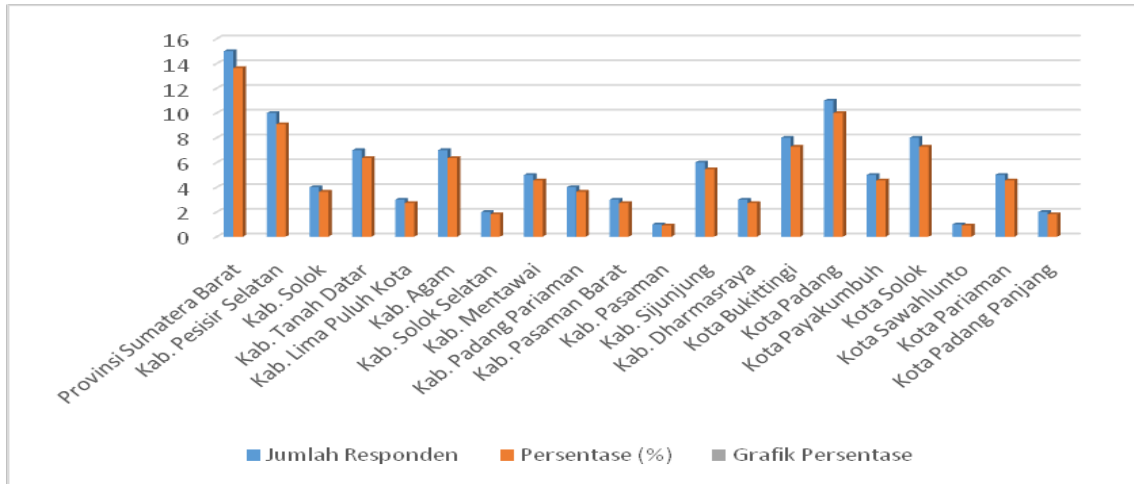


Figure 1. The distribution of respondents by work area

4. RESEARCH FINDING AND DISCUSSION

Prior to running further statistical analysis, the reliability of questionnaire indicated by the internal consistency of a scale was measured through the Cronbach alpha coefficient (α) recommending a threshold of 0.70 (Hair et al., 2010) to ensure validity. The test results presented 0.853 meaning a high degree of uniformity on the instrument of survey and high level internal consistency reliability amongst the 21 variables. Two test data, namely Kaiser-Meyer-Olkin (KMO) and Bartlett tests of sphericity were carried out to continue the analysis to EFA.

The KMO test results obtained are 0.785 greater than 0.5, meaning that the factor analysis technique can be continued. Meanwhile, the Bartlett test score shows the accuracy of data for EFA, where the significance value is less than 0.05 (Hair et al., 2010; Shan et al., 2015). SPSS v.25 has been used to run EFA. The calibration criteria used for factor extraction are eigen-values greater than 1.

The results of the anti-image correlation, 8 variables indicated that the correlation matrix score was below 0.5 so that the variables were discarded (Field, 2009). The remaining 14 other variables are continued in the next EFA process. Figure 2, it can be seen the trend of the variables towards the eigen-values.

Table 2. KMO and Bartlett Test

Test for data		Value
Kaiser-Meyer-Olkin (KMO) - Measure of Sampling Adequacy.		0.785
Bartlett's Test of Sphericity	Approx. Chi-Square	596.111
	df	91
	Sig.	0.000

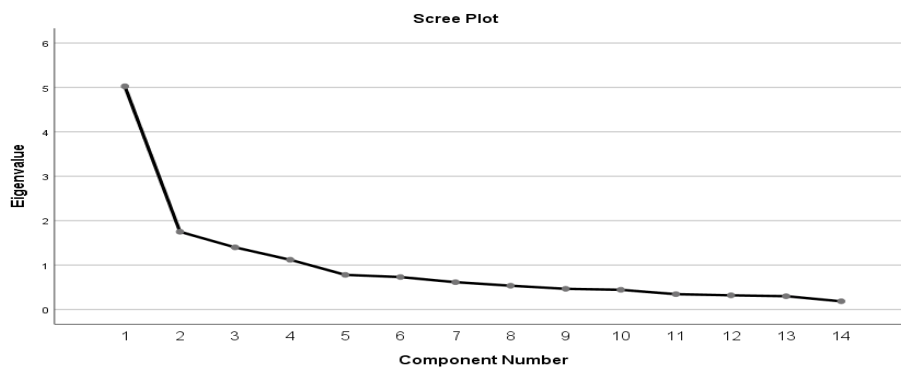


Figure 2. Screen plot graph

Table 3. Extraction results 14 factors

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.026	35.903	35.903	5.026	35.903	35.903
2	1.749	12.496	48.399	1.749	12.496	48.399
3	1.398	9.986	58.385	1.398	9.986	58.385
4	1.119	7.994	66.379	1.119	7.994	66.379
5	0.779	5.562	71.941			
6	0.730	5.212	77.154			
7	0.614	4.385	81.539			
8	0.534	3.818	85.357			
9	0.464	3.315	88.672			
10	0.442	3.159	91.830			
11	0.344	2.459	94.289			
12	0.318	2.272	96.561			
13	0.298	2.127	98.689			
14	0.184	1.311	100.000			

Table 4. Factors and Variables in the challenges of obtaining procurement professionals

Code	Factors and Variables	Loading Factor
F1: Standards and policies		
X3	Lack of compliance and policy consistency in the procurement process	0.620
X6	Unclear and non-standardized tender documents	0.610
X8	Rules and procedures are not well defined and open to the public	0.554
X9	Regulations are not formulated in a clear, consistent, comprehensive, and flexible way	0.760
X10	Training and socialization of procurement regulations by the Procurement Work Unit is rarely carried out	0.661
X11	The procurement work unit does not carry out the procedures and provisions listed in the procurement rules in practice	0.830
F2: Transparency and accountability in procurement information		
X2	Ineffective and inefficient use of value for money in procurement process	0.589
X5	Transparency in the awarding of tenders	0.724
X7	Lack of providing equal opportunities for contractors in fulfilling the terms of the offer	0.760
X12	Existing regulations are made unclear and inconsistent so that tender documents are not open transparently	0.738
X16	Disagree with the established professional code of ethics	0.531
F3: Experience and Education		
X13	Lack of education level to meet certification requirements	0.867
X15	lack of other knowledge requirements such as negotiation process, contract administration and others	0.878

The extraction process of 4 factors with 14 variables was re-analyzed and showed that all the requirements for correlation, communality and factor loading had been met. The four formed factors were able to explain 66.38% of the total variance as shown in Table 3. Furthermore, the preparation and

naming of the formed factors are carried out. Because the 4th factor only consists of one variable (X3.6), the factor is not considered (Table 4). Yong and Pearce (2013) stated that two variables were sufficient with the consideration that the two variables were strongly correlated ($r > 0.70$).

4.1. Standard and Policy Factors (SPF)

The SPF is a condition that must be followed and complied with in the process of managing public organizations, including procurement management in diverse regions. This first factor summarizes 7 things that affect the difficulty of getting procurement professionals in the public service, namely lack of compliance and policy consistency in the procurement process (X3), unclear and non-standardized tender documents (X6), rules and procedures are not well defined and open to the public (X8), regulations are not formulated in a clear, consistent, comprehensive, and flexible way (X9), training and socialization of procurement regulations by the procurement work unit is rarely carried out (X10), and the procurement work the unit does not carry out the procedures and provisions listed in the procurement rules in practice (X11).

According to many experts, the rules and policies governing the procurement process have a significant impact on the way that procurement authorities develop professionally (Williams et al., 2018). Training and socialization of procurement must be carried out due to internal organizational changes, the interests of external stakeholders and procurement professionals (Hochman & Boll, 2009; Faes et al., 2001; Macbeth, 1994). Furthermore, Childs et al. (1994) and Thai (2001) say that through interactions among procurement rules and regulations, organizational structure, procurement processes and methods, and technology, public procurement is a dynamic system that is constantly changing and developing.

For this reason, stakeholders in preparing procurement guidelines standards should accommodate various needs, conditions, and diverse regional capabilities in carrying out a good procurement process. Changes to regulations that are too frequent indicate that procurement standards and guidelines have not been properly accommodated in the field, let alone involving various elements or various interests from groups of procurement actors in various regions. As a result, synchronization between regulations at the central and regional levels need to be emphasized and questioned in order for the need for integrated and comprehensive regulations to be achieved and implemented as expected.

4.2. Transparency and Accountability Factors (TAF)

Transparency and accountability in the procurement process are indicators of the success of a procurement of goods and services, which can be measured by the effectiveness and efficiency of the procurement itself. TAF consists of; Ineffective and inefficient use of value for money in the procurement process (X2), transparency in the awarding of tenders (X5), lack of providing equal opportunities for contractors in fulfilling the terms of the offer (X7), existing regulations are made unclear and inconsistent so that tender documents are not open transparently (X12) and disagree with the established professional code of ethics (X16).

Transparency and accountability in procurement is an effort to minimize corruption in public procurement (Ahmad et al., 2021; Choi, 2010). The evaluation of the procurement system's transparency focuses on the government's obligation to notify all stakeholders about the use of public funds in accordance with the accountability principle. The tender process is prone to fraud and corruption involving goods and services procurement staff (Indrawan et al. 2020; Nurharjanti, 2017). A Thai study (2001) on public procurement re-examined reveals that the professionalism of the procurement committee is a factor that influences the success of a goods/services procurement system.

Accordingly, the transparency process has begun by announcing all procurement packages in the Procurement Information General Planning System (SIRUP) which can be accessed by all parties, which is then carried out by displaying all tender and selection packages into the Electronic Procurement System (SPSE). All stages can be monitored and overseen by various parties in an effort to achieve procurement objectives. Various single data applications are currently being developed and integrated to support a more effective and efficient procurement process. According to Alkaran (2018), a positive sign that the government is improving its procurement processes in an efficient and effective manner is improved transparency through the e-procurement website.

4.3. Experience and Education Factors (EEF)

Other supporting factors that pose a challenge in obtaining procurement professionals in the public service are the lack of education level to meet certification requirements (X13) and lack of other knowledge requirements such as negotiation process, contract administration and others (X15). Studies on the competence of public services emphasize the need for basic knowledge of public procurement as a requirement for development in the cadre of public service procurement officials (Peter et al., 2014). Many researchers believe that experience in business skills, technical skills, strategic skills and leadership is also fundamental for a procurement professional (Guinipero et al., 2006; Prier et al., 2010).

According to William et al. (2018), the capacity to ascertain comprehension among professionals suggests that there may be some consensus on the idea of becoming a public procurement professional because this profession is constantly changing. This suggests that at various stages of a career and for professional certification, the order of knowledge items to comprehension demands varies dramatically. The ongoing requirement for learning and training is a very dynamic and complex aim in order for procurement staff to make the greatest use of resources (Liu et al., 2019).

In Indonesia, the current government through the Government Goods and Services Procurement Policy Agency (LKPP) has issued guidelines and policies that all procurement must be carried out by the Goods and Services Procurement Functional (PBJ Functional). ASNs who want to become PBJ Functional are required to have a procurement portfolio of at least 2 (two) years in order to qualify and be appointed as the PBJ Functional. Even so, procurement personnel are frequently entangled in legal situations. Some of the causes include a lack of experience in carrying out the procurement process both in planning, supplier selection, and contract management. This will certainly lead to low interest in ASN in the career path of the procurement of goods and services.

5. CONCLUSION

Public procurement plays an important role in the success of national development in terms of improving public services at both the central and regional levels. This study provides an overview of the lack of ASN interest to occupy procurement functional positions in the West Sumatera Province. The purpose of this research is to identify and evaluate the factors influencing the difficulty of obtaining functional procurement from the perspective of various ASN procurement managers in the West Sumatra region of Indonesia. From the findings of this research, three determinants of the difficulty of obtaining functional procurement were identified, namely (1) Standard and Policy Factors (SPF); (2) Transparency and Accountability Factors (TAF); and (3) Experience and Education Factors (EEF).

The findings of this study can be used as a reference for stakeholders engaged in government project procurement to find out the inhibiting aspects that need more serious attention. Procurement standards and policies have a significant impact on professional development. This research suggests that stakeholders in preparing procurement guidelines standards should accommodate various needs, conditions, and diverse regional capabilities in carrying out a good procurement process. Transparency and accountability in procurement is also one of the efforts to minimize corruption in public procurement so that the ASN functional in procurement is not anxious about being involved in the procurement process due to procedural errors. The transparency evaluation of the procurement system focuses on the government's obligation to notify all stakeholders about the use of public funds in accordance with the concept of accountability. Finally, Experience and Education Factors (EEF) emphasize the importance of basic public procurement knowledge as well as supporting skills for advancement in the cadre of public service procurement officials.

This research does not measure the relationship between the factors that influence the difficulty of obtaining functional procurement. It is very important to look at the relationship between factors as well as the relationship of each factor to the challenge of getting procurement professionals. Therefore, it is suggested that the next research measure the relationship between factors that influence the difficulty of obtaining functional procurement while also looking at the relationship of

each factor as well as the challenge of getting the procurement professional itself. Confirmatory factor analysis through Analysis Moment of Structure (AMOS) or Partial Least Square (PLS) can be used for this purpose.

REFERENCES

- Ahmad, H., Hassan, S.H.A., & Ismail, S. (2021). Transparency level of the electronic procurement system in malaysia. *Journal of Financial Reporting and Accounting*, 21(3), 592-606. <https://doi.org/10.1108/JFRA-07-2021-0181>
- Bals, L., Schulze, H., Kelly, S., & Stek, K. (2019). Purchasing and supply management (PSM) competencies: Current and future requirements. *Journal of Purchasing and Supply Management*, 25(5), 100572. <https://doi.org/10.1016/j.pursup.2019.100572>
- Baheska, B.C. & Bisangabsaija, E. (2009). Determinants of unethical public procurement in local government systems of Uganda: A case study. *International Journal of Procurement Management*, 3(1), 91-104. <https://doi.org/10.1504/IJPM.2010.029777>
- Basheka, B.C. & Kabatereine, D. (2013). Public procurement reforms in Uganda. A historical trajectory. *Journal of Public Procurement and Contract Management*, 2(1), 27-41.
- Childs, S.J., Maull, R.S. & Bennett, J. (1994). Frameworks for understanding business process reengineering. *International Journal of Operations & Production Management*, 14 (12), 22-34. <https://doi.org/10.1108/01443579410072346>
- Choi, J.W. (2010). A study of the role of public procurement – Can public procurement make society better. *Proceeding of the 4th International Public Procurement Conference*. Seoul, South Korea. <https://www.ipppa.org/IPPC4/Proceedings/13ProcurementPreferences/Paper13-4.pdf>
- Cogburn, J.D. (2003). Exploring differences in American States procurement practices. *Journal of Procurement Management*, 3(1), 3-28. <https://doi.org/10.1108/JOPP-03-01-2003-B001>
- Concha, G., Astudillo, H., Porrúa, M., & Pimenta, C. (2012). E-Government procurement observatory, maturity model and early measurements. *Government Information Quarterly*, 29(SUPPL. 1), S43–S50. <https://doi.org/10.1016/j.giq.2011.08.005>
- Cooper, W.R., Farank, L.G. and Kemp, A.R. (2000). A multinational comparison of key ethical issues, helps and challenges in the purchasing and supply management profession: The key implications for business and the professions. *Journal of Business Ethics*, 23 (1), 83-100.
- Dimitri, N. (2013). Best value for money in procurement. *Journal of Public Procurement*, 13(2), 149-175. <https://doi.org/10.1108/JOPP-13-02-2013-B001>
- Erridge, A. & McIlroy, J. (2002). Public procurement and supply management strategies. *Public Policy and Administration*, 17(1), 52-71. <https://doi.org/10.1177/095207670201700105>
- Faes, W., Knight, L. & Mattysens, P. (2001). Buyer profiles: An empirical investigation of changing organizational requirements. *European Journal of Purchasing and Supply Management*, 7(3), 197-208. [https://doi.org/10.1016/S0969-7012\(00\)00031-9](https://doi.org/10.1016/S0969-7012(00)00031-9)
- Field, A. (2009). *Discovering statistics using SPSS*. 3rd Edition. London: Sage Publications Ltd.
- Giuniperio, L.C. & Dawn, H.P. (2000). World-class purchasing skills: An empirical investigation. *Journal of Supply Chain Management*, 36(4), 4-13. <https://doi.org/10.1111/j.1745-493X.2000.tb00081.x>
- Hakim, A. N., Priyandari, Y., & Suhardi, B. (2014). Penentuan jumlah pejabat fungsional pengadaan barang/jasa pemerintah berdasarkan analisis beban kerja (studi kasus unit layanan pengadaan Kota Surakarta). *Seminar Nasional IDEC*, Surakarta.
- Hair, J.F., Black, W.C., Babin, B.J., Danerson, R.E., & Tahham, R.L. (2010). *Multivariate and analysis*, 7th Edn, Prentice-Hall, Upper Saddle River, NJ
- Hair, J.F., Hult, G.M., Ringle, C.M., Sartetd, M., Danks, N.P., & Ray, S. (2021). *Partial least structural equation modeling (PLS-SEM) using R*. Springer. Switzerland.
- Hochman, M. & Boll, R. (2009). Procurement's chance to shine, *Supply Chain Management Review*, 13(2), 50-51.
- Hohenstein, N. O., Feisel, E., & Hartmann, E. (2014). Human resource management issues in supply chain management research: A systematic literature review from 1998 to 2014. *International Journal of Physical Distribution and Logistics Management*, 44(6), 434–463. <https://doi.org/10.1108/IJPDLM-06-2013-0175>
- Indrawan, J., Ilmar, A., & Hermina, H. (2020). Korupsi dalam pengadaan barang dan jasa di

- pemerintah daerah. *Jurnal Transformativa*, 6(2), 127–147.
- Ilahiyah, E. N., Pujotomo, D., & Sriyanto, S. (2016). Pengukuran kinerja pengadaan barang/jasa dengan menggunakan indonesia procurement maturity model di unit layanan pengadaan Universitas Diponegoro. *Industrial Engineering Online Journal*, 5(4), 1–7.
- Juliani, D., & Sholihin, M. (2014). Pengaruh faktor-faktor kontekstual terhadap persepsian penyerapan anggaran terkait pengadaan barang/jasa. *Jurnal Akuntansi Dan Keuangan Indonesia*, 11(2), 177–199. <https://doi.org/10.21002/jaki.2014.10>
- Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi. (2020). Peraturan menteri pendayagunaan aparatur negara dan reformasi birokrasi nomor 29 tahun 2020 tentang Jabatan Fungsional Pengelola Pengadaan Barang/Jasa. Kementerian Pendayagunaan Aparatur Negara dan Reformasi Birokrasi. <https://peraturan.bpk.go.id/Home/Details/143707/permen-pan-rb-no-29-tahun-2020>
- Komakech, R.A (2016). Public procurement in developing countries: Objectives, principles and required professional skills. *Public Policy and Administration Research*, 6(8): 20 – 29
- Liu, J., Xue, J., Yang, L. and Shi, B. (2019). Enhancing green public procurement practices in local governments: Chinese evidence based on a new research framework. *Journal of Cleaner Production*, 211, 842-854. <https://doi.org/10.1016/j.jclepro.2018.11.151>
- Macbeth, D.K. (1994). The role of purchasing in a partnering relationship. *European Journal of Purchasing and Supply Management*, 1(1), 19-25. [https://doi.org/10.1016/0969-7012\(94\)90039-6](https://doi.org/10.1016/0969-7012(94)90039-6)
- Mahmood, S.A.I. (2010). Public procurement and corruption in Bangladesh: Confronting the challenges and opportunities. *Journal of Public Administration and Policy Research*, 2(6), 103-111.
- Molenaar, K., Washington, S. & Diekmann, J. (2000). Structural equation model of construction contract dispute potential. *Journal of Construction Engineering and Management*, 126(4), 268–77. [https://doi.org/10.1061/\(ASCE\)0733-9364\(2000\)126:4\(268\)](https://doi.org/10.1061/(ASCE)0733-9364(2000)126:4(268))
- Musanzikwa, M. (2013). Public procurement system challenges in developing countries: the case of Zimbabwe. *International Journal of Economics, Finance and Management Sciences*, 1(2): 119-127.
- Neupane, A., Soar, J., Vaidya, K., & Yong, J. (2012). Role of public e-procurement technology to reduce corruption in government procurement. *International Public Procurement Conference*, Seattle, Washington.
- Nurharjanti, N. (2017). Faktor-faktor yang berhubungan dengan fraud pengadaan barang/jasa di Lembaga Publik. *Jurnal Akutansi dan Investasi*, 18(2), 209-221.
- Nurlukman, A. D. (2017). E-procurement: Inovasi penyelenggaraan pemerintahan dalam pengadaan barang dan jasa berbasis e-government di Indonesia. *Journal of Government and Civil Society*, 1(1), 81-93. <https://doi.org/10.31000/jgcs.v1i1.264>
- Odhiambo, W. & Kamau, P., (2003). *Public procurement: Lessons from Kenya, Tanzania and Uganda. The integration of developing countries into the world trading system*. OECD Working Paper No. 208. <http://www.oecd.org/countries/uganda/2503452.pdf>
- Oke, A. E., Ogunsami, D. R. & Ogunlana, S. (2012). Establishing a common ground for the use of structural equation modeling for construction related research studies. *Australian Journal of Construction Economic and Building*, 12(3), 89-94
- Prier, E., Mc-Cue, C. and Behara, R. (2010). The value of certification in public procurement: The birth of a profession? *Journal of Public Procurement*, 10(4), 512-540. <https://doi.org/10.1108/JOPP-10-04-2010-B002>
- Peter, A-D., Westcott T, Mason, J. & Booth, C. (2014). Developing capability of public sector procurement in Ghana: An assessment of the road sector client. *Construction Research Congress. Atlanta, Georgia: American Society of Civil Engineers*, 2053–2062
- Schapper, P. R., Malta, J. N. V. & Gilbert, D. L (2006). Analytical framework for the management and reform of public procurement. *Journal of Public Procurement*, 6(1), 1-26. <https://doi.org/10.1108/JOPP-06-01-02-2006-B001>
- Shan, M., Chan, A. P., Le, Y. & Hu, Y. (2015). Investigating the effectiveness of response strategies for vulnerabilities to corruption in the chinese public construction sector. *Science and Engineering Ethics*, 21(3), 683-705.
- Thai, K. (2001). Public Procurement Re-Examined, *Journal of Public Procurement*, 1(1), 9-50. <https://doi.org/10.1108/JOPP-01-01-2001-B001>

- Wibowo, R. (2019). Impact of procurement professionalization on the efficiency of public procurement: Operations excellence. *Journal of Applied Industrial Engineering*, 11(3), 228-239. <https://doi.org/10.22441/oe.v11.3.2019.032>
- Williams, A.M., Lau, F. & McCue, C.P. (2018). The perception of knowledge requirement for public procurement officials and their professional development. *Journal of Public Procurement*, 18(1), 50-67. <https://doi.org/10.1108/JOPP-03-2018-004>
- Yakovlev, A., Tkachenko, A., Demidova, O. & Balaeva, O. (2015). The impacts of different regulatory regimes on the effectiveness of public procurement. *International Journal of Public Administration*, 38(11), 796-814. <https://doi.org/10.1080/01900692.2014.980909>
- Yong, A.G. & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Method for Psychology*, 9(2), 79-94.
- Zahoor, H., Chan, A.P., Utama, W.P., Gao, R. & Memon, S.A. (2017). Determinants of safety climate for building projects: Sem-based cross-validation study. *Journal of Construction and Management*, 143(6)
- Zorzini, M., Hendry, L.C., Huq, F.A. & Stevenson, M. (2015). Socially responsible sourcing: reviewing the literature and its use of theory. *International Journal of Operations & Production Management*, 35(1), 60-109. <https://doi.org/10.1108/IJOPM-07-2013-0355>