

Research article

Prism: A Way to Measure the Performance of Higher Education Institutions

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Abstract.

Higher education institutions are keen to assess their performance. It is important for them to evaluate their outcomes to promote their future performance. The aim of this research was to determine the level of preparation of the faculty of business at Universitas PGRI Yogyakarta for accreditation based on the prism aspects. This study used questionnaires for data collection with a Likert scale split by the prism assessment levels of satisfaction, strategy, process, capability, and contribution, and then grouped into the criteria of high, medium and low levels according to the provisions of OMAX. The results showed that the faculty of business reached less than 100% in all the prism aspects. This was interpreted as inefficiency. The highest achievement was 99.18% in the contribution aspect and the lowest was 84.28% in the capability aspect. It was concluded that the faculty of business of Universitas PGRI Yogyakarta must be even more active in increasing their performance to prepare for accreditation.

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Published: 28 September 2022

Publishing services provided by
Knowledge E

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Selection and Peer-review under the responsibility of the ICESRE 2021 Conference Committee.

Keywords: accreditation, faculty of business performance, OMAX, prism models

1. Introduction

The progress of higher education is measured by the ability of university to respond industrial development, including digitalization adaptation, and where the human and machine interact each others, which in turn increasing communication and information by technology [1-8]. Higher education readiness toward industrial development 4.0 which related to big data, internet of things, cloud computing can affect education advancement. Meanwhile, the industrial development also related with society-centered human resources which can balance the economic advancement with social problem solving through the system between real world and cyber world [9].

Economic advancement by considering social problems covers all aspects including education. Every entity need to consider social problems which can be explained by stakeholder theory where every group or individual can affect of be affected with organizational goals achievement [10]. Stakeholders have important role to develop the

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nation by education and education curriculum, so that it requires good and strategic cooperation in adjusting the development of educational curriculum that are relevant to the working environment. Higher education need to increase the quality and competence in order to compete globally. The quality of higher education could shows the stakeholders' trust. We can find out higher education quality by its accreditation by Kementerian Pendidikan dan Kebudayaan Indonesia (Indonesia Ministry of Education and Culture). As many as 2,136 universities are actively operating by their input, process, and output [11].

Accreditation assessment both academically and non-academic drives universities (higher education) to comply the rules and sustainability to adjust the external quality control practices [12]. Higher educational institution performance achievement need to pay attention some stakeholders [13]. However, service to students also important point [14]. One of the organizational performance measurement is using performance prism, focusing on the contribution of stakeholders, satisfaction, process, and capabilities.

Several prior studies test the performance of higher education theoretically [15] and empirically [16] and the conclusion is prism can be used as higher educations' performance assessment efficiently by Key Performance Indicators (KPI) from every stakeholder. This study also test the higher education performance using prism and KPI in Universitas PGRI Yogyakarta focusin in Faculty of Business, several aspects are included, which are satisfaction, process, capability, and contribution of every stakeholder.

This study is important due to lack of prior research related to performance assessment on higher educational institution. This study also using prism method and OMAX test based on KPI assessment on Faculty of Business. This study uses questionnaires for data collection with a Likert scale which is then grouped into the criteria of High, Medium and Low levels according to the provisions of OMAX. This study is able to prove that Prisma's assessment at the Faculty of Business level is able to test the level of satisfaction, strategy, process, capability and contribution aspects that can show the progress of the Faculty of Business achievement compared to previous performance. Therefore it is necessary to test the implementation of Prism at the Faculty of Business which is able to show the efficiency of the performance of each stakeholder.

2. Theoretical Review

Higher education requires preparation for accreditation as a form of accountability to stakeholders, especially with the PT 4.0 accreditation instruments (IAPT 4.0) which has

changed starting in May 2018 from 7 standards to 9 standards [12]. This results in universities having to comply with and fulfill the accreditation, starting from student affairs, services, and quality of lecturers, etc. in accreditation [13-14, 17].

Accreditation assessment shows the accountability of an university toward public, therefore every university (especially on the faculty level) should always notice the involvement of every stakeholder [18] In addition, by identifying stakeholders, it will be able to support effective stakeholders management [19]. Pradesa et al. [20] identify the stakeholders in the context of higher education, can help advancing management in terms of prioritization and strategy planning.

2.1. Faculty of Business Performance Assessment

The use of organizational performance can be done in various ways, which are more commonly known clearly, namely financial performance such as Return on Investment (ROI) for companies. However, financial performance alone is not enough and it is necessary to look at the level of quality of the report, such as Balance Score Card (BSC) performance [21] or Triple Bottom Line (TBL) [22]. Nevertheless, this does not indicate the level of contribution made by stakeholders, then Neely et al., [23] introducing the contribution as one of performance prism measurement which complement prior assessment. Neely [4] measures the performance with previous measurements because it uses two directions by considering what is needed and what is desired from each stakeholder. So that there are tradeoffs. In addition, the prism of assessing the level of satisfaction and strategy, as well as the capability process of each stakeholder, so that the prism test will get closer between the stakeholders and the units described, Prism's performance is shown as follows:

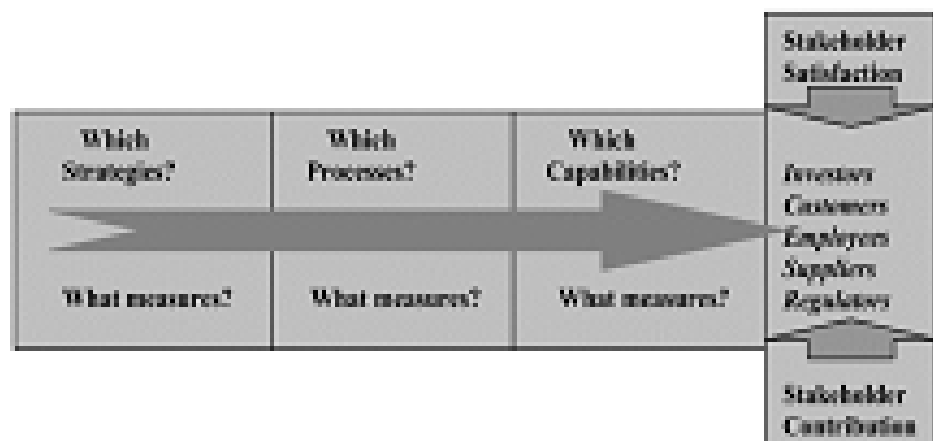


Figure 1: The performance prism.

In using this prism, it is necessary to pay attention to 5 (five) main questions that underlie the company or organization in developing the right strategy for decision making, including:

1. Stakeholder satisfaction: who are the key stakeholders and what do they want and what is needed?
2. Strategy: what strategies should be applied to meet stakeholder wants and needs?
3. Process: what critical processes are required to carry out the strategy?
4. Capability: what capabilities must be operated to improve the operation?
5. Contribution; What stakeholders are needed if you are going to develop this security?

2.2. Prior Study Related with Prism

Studies on the implementation of Prism at higher educational institution have been conducted by [16] who tested at STT Batam as a performance measurement model by considering aspects that are not only based on consumers or income as generally from the stakeholder side such as owners, suppliers, employees, but include government and even the community. [25] tested prism management which is to assess the performance of higher educational institution in Indonesia, and [26] tested the performance of UIN Jakarta, especially the Faculty of Engineering by using BSC and collaborating prisms in determining Key Performance, which proves that assessments in higher educational institution can also be done with BSC and prism.

Another research, namely [27] explores the performance of Prism in higher educational institution which is very valuable because it allows for the evaluation of all stakeholders "wants and needs" that might be ignored. Higher educational institutions need to show the characteristics of the integrated system, including paying attention to the needs of stakeholders which can be the key to the success or failure of planned organizational change efforts as well as continuity in planned organizational change as perceived by stakeholders. The results of [16] test on the performance of higher educational institution in STT Batam by using Prisma showed that the higher educational institution performance was classified as quite good with a score of 7.2. Likewise with the studies of [25] and [26] which tested stakeholders by paying attention to aspects of satisfaction, strategy, process, capability and contribution by using prisms in assessing

higher educational institution performance, especially the level of faculties, first research question as follows:

Research Question 1: How do faculty of business assessments based on prism aspects, namely: strategy, satisfaction, process, capabilities, and contributions?

Performance measurement using Prism cannot be separated from the determination of Key Performance Indicators (KPI) as a reference to see the development of performance achievements. In accordance with previous studies in testing Prism with OMAX carried out in companies both in the service and production industries, which shows prism performance measurement using KPI is able to show more effective performance [28]. In addition, several KPI are able to determine performance development, such as the study from [29] using 16 KPI, [16] using 25 KPI, and [30] using 10 KPI. Based on this determination, it is necessary to test the method of determining KPI in prism measurement, then a second research question arises, as follows:

Research Question 2: How is the KPI are determined at the Faculty of Business in measuring Prism?

Prism performance measurement from KPI determination will be used in calculating the achievement of performance progress which is generally used with OMAX which is able to assess the efficiency of performance achievements such as studies from Bora [16] and Putri et al., [30] and Pramestari [31]. In addition, from the Prism measurement from several previous studies in testing prisms with the OMAX measurement, it was able to determine the level of performance efficiency. Hence the question arises about the relationship of KPIs to performance. Then the third research question is as follows:

Research Question 3: How is the efficiency of performance in the Faculty of Business at Universitas PGRI Yogyakarta.

3. Research Methods

This research is an exploratory method that aims to clarify a problem, especially in relation to the main factor that determines the performance of higher institution with Prisma. This type of research is descriptive, namely by explaining the objective conditions of the performance of the Faculty of Business. This research approach uses quantitative and qualitative approaches by using the interpretation of the results of data processing.

The subjects of this study were stakeholders including 8 elements consisting of foundations, students, lecturers and employees, alumnee, partners, internal governance

systems, users and the community around Universitas PGRI Yogyakarta. As for each as follows:

TABLE 1: Research Sample Description.

No	Respondents	Quality
1	Lecturers of Faculty of Business	20
2	Alumni of Faculty of Business	135
3	Partners	10
4	Internal Governance System	31
	Rector	1
	Vice Rector	3
	Quality Assurance Unit	1
	Student Affairs and Cooperation Unit	3
	Admission Unit	2
	Languange Center Unit	3
	Information & Communication Technology Unit	4
	Finance Centre Unit	4
	Research & Community Service Unit	5
	Educational Development Unit	1
	Library	2
	Academic Administration Unit	2
5	Society	3
6	Students	94
7	Users	6
8	Foundation	3
	Total	302

The source of research data is primary data derived from the results of filling out a questionnaire with questions tailored to the stakeholder and has been tested for reliability and validity with results that show reliable and valid. Data analysis using OMAX which is adjusted to 3 levels of high, medium and low. KPI determination uses 10 levels where levels 0-3 are low, 4-7 levels are medium, and 8-10 are high levels.

4. Results and Discussion

4.1. Determination of KPI with Prism

KPI determination in measuring Prism, by exploring the results of the data obtained based on the 1-4 Likert scale which is detailed into 10 levels. where level 10 means a

score of 4, level 9 with a score of 3.75 continues to decline by 0.25 to level 0. Meanwhile, the level of weighting uses policies from the Business Faculty based on the level of suitability of roles in the development of the Business Faculty. the weight for lecturers (L) is 15%, alumni (A) 10%, partners (P) 10%, tata pamong (TP) 20%, society/community (C) 10%, students (S) 15%, users (U) 10% and foundations (F) 10%. The following is a table describing KPI:

TABLE 2: Prism Aspect Score and KPI

	level	Satisfaction	strategy	proces	capability	contribution	Stakeholder	KPI
H	10	4	4	4	4	4	L	15%
	9	3,75	3,75	3,75	3,75	3,75	A	10%
	8	3,5	3,5	3,5	3,5	3,5	P	10%
	7	3,25	3,25	3,25	3,25	3,25	TP	20%
M	6	3	3	3	3	3	C	10%
	5	2,75	2,75	2,75	2,75	2,75	S	15%
	4	2,5	2,5	2,5	2,5	2,5		
L	3	2,25	2,25	2,25	2,25	2,25		
	2	2	2	2	2	2		
	1	1,75	1,75	1,75	1,75	1,75		
	0	1,5	1,5	1,5	1,5	1,5		

The score is filled with the appropriate level of each stakeholders, while the weight is the weight of each stakeholders, then the value is the result of the multiplication of the score and the weight.

After that, the calculation of the weight score corresponds to the weight of the stakeholders, for example literature (L) 15%, alumni (A) 10% and so on. while the value is calculated from the presence of each stakeholder, for example L is at level 8 means value is $120=8 \times 15$, A is at level 5 means value is $5 \times 10=50$ and so on

4.2. Measuring Faculty of Business Performance with OMAX

In accordance with prism measurements using OMAX and to answer research questions about the performance efficiency achievements of the Faculty of Business. Then from the results of the value of each aspect of the prism the current value level is measured with the previous one. In calculating this step, it is necessary to calculate the previous value, which means the achieved score of the results is multiplied by the weight of each stakeholder.

So the difference in the score for the prism aspect is according to the level. To measure the present value, namely the measurement of the score with the actual value achieved which is then multiplied by the weight and the previous value will be generated. for example with the achievement of satisfaction.

TABLE 3: Omax.

Score	8	5	8	4	7	6	6	5	
Weight	15	10	10	20	10	15	10	10	
Value	120	50	80	80	70	90	60	50	600
Score	3,5	2,83	3,56	2,68	3,3	3,13	3,2	2,85	
Weight	15	10	10	20	10	15	10	10	
Value	52,5	28,3	35,6	53,6	33	46,9	32	28,5	310,45
	Filled according to the level 0-10								
	Filled according to the score obtained								

the current and previous assessing stages that generate the index. Current is the current achieved score based on performance level*. Previous or best performance is the previously considered good score**.

$$\text{Index} = (\text{current} - \text{previous}) / \text{previous} \times 100$$

If P = 100% it can be concluded that the performance is the same as the previous year. If P > 100% it can be concluded that the performance is higher than the previous year (efficient). If P < 100% it can be concluded that the performance is lower than the previous year.

TABLE 4: Satisfaction test.

<i>Satisfaction</i>	<i>Weight</i>	15	10	10	20	10	15	10	10	
<i>level</i>	<i>Stakeholders</i>	<i>L</i>	<i>A</i>	<i>P</i>	<i>TP</i>	<i>C</i>	<i>S</i>	<i>U</i>	<i>F</i>	
<i>Score</i>		8	5	8	4	7	6	6	5	
<i>Weight</i>		15	10	10	20	10	15	10	10	
<i>Value</i>	600	120	50	80	80	70	90	60	50	
<i>Best performance score</i>		3,5	2,83	3,56	2,68	3,3	3,13	3,2	2,85	
	<i>weight</i>	15	10	10	20	10	15	10	10	
<i>Value</i>	310,45	52,5	28,3	35,6	53,6	33	46,9	32	28,5	
<i>Indeks=93,2</i>		<i>Current=600</i>					<i>Previu=310,45</i>			

Table 4 shows the results of the satisfaction test showing a total score of 600 with a high level of satisfaction for stakeholders, lecturers (L), partners (P) and the community (C) while the medium level is obtained from alumni stakeholders (A), internal governance system/ tata pamong (TP), students (S), users (U) and foundations (F), while from the

TABLE 5: Strategy test.

Satisfaction level	Weight	15	10	10	20	10	15	10	10
	Stakeholders	L	A	P	TP	C	S	U	F
	Score	7	6	8	5	7	3	6	5
	Weight	15	10	10	20	10	15	10	10
	Value	580	105	60	80	100	70	45	60
Best performance	score	3,15	3,05	3,5	2,9	3,33	2,47	3,08	2,85
	weight	15	10	10	20	10	15	10	10
	Value	302,7	47,25	30,5	35	58	33,3	37,05	30,8
Indeks = 91,608		Current = 580				Previu =302,7			

TABLE 6: Process Test.

Satisfaction level	Weight	15	10	10	20	10	15	10	10
	Stakeholders	L	A	P	TP	C	S	U	F
	level	score							
	Score	6	6	8	4	8	7	6	5
	Weight	15	10	10	20	10	15	10	10
	Value	625	90	60	80	80	105	60	50
Best performance	score	3,05	3,1	3,52	2,58	3,5	3,35	3,16	2,85
	weight	15	10	10	20	10	15	10	10
	Value	313,7	45,75	31	35,2	51,6	35	50,25	31,6
Indeks = 99,23		Current = 625				Previu =313,7			

TABLE 7: Capability test.

Satisfaction level	Weight	15	10	10	20	10	15	10	10
	Stakeholders	L	A	P	TP	C	S	U	F
	Score	5	4	8	5	6	5	6	6
	Weight	15	10	10	20	10	15	10	10
	Value	550	75	40	80	100	60	75	60
Best performance	score	2,75	2,65	3,7	2,7	3,16	2,92	3,2	3,18
	weight	15	10	10	20	10	15	10	10
	Value	298,45	41,25	26,5	37,5	54	31,6	43,8	32
Indeks = 88,285		Current = 550				Previu = 298,45			

current satisfaction value 600, the previous value is 310.45 so that the satisfaction index = $(600-310.45)/310.45 \times 100\% = 93,26\%$. Likewise for the explanation of tables 5, 6, 7 and 8.

Table 9 shows the overall results compared to the performance provisions in OMAX, it can be explained that both from the aspects of satisfaction, strategy, process, capability,

TABLE 8: Contribution Test.

Satisfaction level	Weight	15	10	10	20	10	15	10	10
Score	Stakeholders	L	A	P	TP	C	S	U	F
Weight		8	5	7	6	6	5	7	7
Value		15	10	10	20	10	15	10	10
Best performance	635	120	50	70	120	60	75	70	70
Value	score	3,7	2,86	3,4	3,06	3,1	2,82	3,29	3,33
Value	weight	15	10	10	20	10	15	10	10
Indeks = 99,184	318,8	55,5	28,6	34	61,2	31	42,3	32,9	33,3
		Current = 635				Previous = 318,8			

TABLE 9: Achievement Result From Overall Aspects.

Aspects	Current	Previous	Index	Explanation
Satisfaction	600	310,45	93,267	Inefficient
Strategy	580	302,7	91,608	Inefficient
Process	625	313,7	99,234	Inefficient
Capability	550	298,45	84,285	Inefficient
Contribution	635	318,8	99,184	Inefficient

and contribution are all inefficient, because it is less than 100% which means that preparing for accreditation in 2022 must be better prepared and completely detailed to achieve optimal results. This can happen because the addition of teaching staff or lecturers in the Faculty of Business environment increases while the lecturer productivity is lacking in accordance with the addition of human resources. This is understandable because the new lecturers certainly still have limited flexibility to compete, however the lecturers at the Faculty of Business are very enthusiastic about improving the qualifications of the lecturers so that they will be able to reduce this weaknesses.

5. Conclusion

Based on the overall results it can be said that the Faculty of Business, University of PGRI Yogyakarta in terms of performance achievements of the aspects of satisfaction, strategy, process, capability, and contribution reached less than 100%. This is interpreted as inefficiency. The highest achievement was 99.18% contribution and the lowest was 84.28% capability, thus it can be said that the Faculty of Business must be even more active in increasing its capabilities to develop in order for accreditation preparation. Achievement of low capability values requires consideration, which must be improved

by paying attention to several stakeholders, while other aspects such as satisfaction, strategy, process and contribution almost reach 100%, where the process aspect is 99.234% and the contribution aspect is 99.184%. Overall achievements of the prism aspect of the Faculty of Business (FB) is considered good because it is at a high level, which is more than a score of 7. This shows that FB's performance is quite successful in reaching behind the provisions of industry revolution 4.0 and is ready to carry out accreditation plans.

This results supports previous studies [4, 9] and [20] that the prism model is able to measure the efficiency of university. In addition, this study contributes to the additional insight and references in measuring prism with OMAX and uses a Likert scale score which is simplified in grouping scores, although this study is able to test the performance of a university, especially Faculty of Business , and it will be able to determine the level of Faculty efficiency. Future studies need to use another index testing to strengthen the results.

Acknowledgments

We gratefully thank to Universitas PGRI Yogyakarta for giving us a chance in doing this research through their funding held by Lembaga Penelitian dan Pengabdian Masyarakat (LPPM).

References

- [1] S. Aryati, "TANTANGAN PERGURUAN TINGGI DI ERA REVOLUSI INDUSTRI 4.0.," In: *PROSIDING SEMINAR NASIONAL PENDIDIKAN PROGRAM PASCASARJANA UNIVERSITAS PGRI PALEMBANG*. pp. 811–818. Universitas PGRI Palembang, Palembang (2019)
- [2] A. Primadewi, M. Hanafi, D. Sasongko, et al., "Readiness analysis of accreditation data: a case study for Indonesian higher education.," *Journal of Physics: Conference Series*. vol. 1517, no. 1, pp. 1–8, 2020.
- [3] Hanafi M, Primadewi A, Sunarni S. Pemodelan arsitektur data pada perguruan tinggi (Studi kasus: UMMagelang). *Jurnal RESTI (Rekayasa Sistem dan Teknologi Informasi)*. 2018;2(1):337-344.
- [4] S. Bondar, J.C. Hsu, A. Pfouga, and J. Stjepandić, "Agile digital transformation of System-of-Systems architecture models using Zachman framework.," *Journal of Industrial Information Integration*. vol. 7, no. September, pp. 33–43, 2017.

- [5] Adwan E, Al-Soufi A. Practical EA model development: A case study of an educational institution in Bahrain. *International Journal of Computing & Information Sciences*. 2016;12(1):105-113.
- [6] Soerjaningsih TW. Peningkatan mutu proses Perguruan Tinggi melalui sistem mutu ISO 9000. *The Winners*. 2004;5(2):79-89.
- [7] Ardiansyah MD, Priyandari Y, Damayanti RW. Implementasi knowledge management (KM) untuk menunjang akreditasi program studi (Studi kasus: Program studi teknik industri, Fak. Teknik, Universitas Sebelas Maret Surakarta). Paper presented at: Seminar Internasional dan Konferensi Nasional IDEC; Surakarta; 3-4 May 2016.
- [8] H. Thamrin and E.W. Pamungkas, "A Rule Based SWOT Analysis Application: A Case Study for Indonesian Higher Education Institution.," *Procedia Computer Science*. vol. 116, no. 1, pp. 144–150, 2017.
- [9] Republika. *Siapakah Indonesia menuju industri 5.0?* Republika, Jakarta; 2021.
- [10] R.E.E. Freeman and J. McVea, "A Stakeholder Approach to Strategic Management.," *SSRN Electronic Journal*. pp. 1–32, 2001.
- [11] Nugrahani TS, Nustini Y, Putri IF, Erawati T, Grediani E. Industry 4.0 and university performace based on prism theory. *Journal of Business and Management Review*. 2021(2):65-91.
- [12] BAN-PT Nomor 4. Peraturan badan akreditasi nasional perguruan tinggi nomor 4 tahun 2017 tentang kebijakan penyusunan instrumen akreditasi. Jakarta, Indonesia; 2017.
- [13] Buamonabot I, Nurlaila N, Nurdin N. Pengaruh atribut perguruan tinggi terhadap kepuasan memilih perguruan tinggi. *Cakrawala Management Business Journal*. 2019;2(1):281-1191.
- [14] Budi SS. Pengaruh kualitas pelayanan akademik, kualitas fasilitas kampus dan kualitas dosen terhadap kepuasan mahasiswa Di STIE SBI Yogyakarta. *Jurnal Solusi*. 2017;12(1):1-12
- [15] E. Sahputra Sitepu, A.E. Rangkuti, F. Fachrizal, and P.N. Medan, "ANALYSIS OF THE COMPETENCY OF FRESH GRADUATED HIGHER EDUCATION IN SUPPORTING INDUSTRIAL ERA 4.0.," *IJIET (International Journal of Indonesian Education and Teaching)*. vol. 4, no. 1, pp. 82–101, 2020
- [16] M.A. Bora, "Desain Pengukuran Kinerja Jasa Pendidikan Dengan Metode Performace Prism Studi Kasus Pada Perguruan Tinggi STT Ibnu Sina Batam.," *Ilmu Teknik (ILTEK)*. vol. 10, no. 19, pp. 13014–1313, 2015.

- [17] H.M. Al-Fikri, "PELUANG DAN TANTANGAN PERGURUAN TINGGI MENGHADAPI REVOLUSI DIGITAL DI ERA SOCIETY 5.0.," In: *Prosiding Seminar Nasional Pendidikan 3*. pp. 350–355. *Universitas Majalengka*, Majalengka (2021).
- [18] Mitchell RK, Agle BR, Wood DJ. Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*. 1997;22(4):853-886.
- [19] Bryson JM. What to do when stakeholders matter: Stakeholder identification and analysis techniques. *Public Management Review*. 2004;6(1):21-53.
- [20] H.A. Pradesa, R. Priatna, and A. Novira, "Perspektif Analisis Stakeholder Pada Perguruan Tinggi: Sebuah Pengalaman Praktis Dari Literatur Terdahulu.," In: *Konferensi Nasional Ilmu Administrasi*. pp. 1–5. *STIA LAN Bandung*, Bandung (2019).
- [21] Kaplan RS. Management accounting (1984-1994): Development of new practice and theory. *Management Accounting Research*. 1994;5(3-4):247-260.
- [22] J. Elkington, "Accounting for the Triple Bottom Line.," *Measuring Business Excellence*. vol. 2, no. 3, pp. 18–22, 1998.
- [23] Neely AD, Adams C, Kennerley M. The performance prism: The scorecard for measuring and managing business success. London: Prentice Hall Financial Times; 2002.
- [24] A. Neely, "The evolution of performance measurement research: Developments in the last decade and a research agenda for the next.," *International Journal of Operations and Production Management*. vol. 25, no. 12, pp. 1264–1277, 2005
- [25] Girikallo AS. Management system performance in private colleges in Indonesia (test of national standard of higher education 'SNPT'). *Journal Management Business*. 2017;1(1):65–79.
- [26] Hardi T, Pudjo WP. Prototype sistem informasi pengukuran kinerja fakultas dengan menggunakan balanced scorecard studi kasus: Fakultas sains dan teknologi UIN Jakarta. *Jurnal Teknik Informatika*. 2018;11(2):127–138.
- [27] S. Smulowitz, "Evidence for the performance prism in higher education.," *Measuring Business Excellence*. vol. 19, no. 1, pp. 70–80, 2015.
- [28] L. Mardiono, E. Wibisono, and C. Jolanda, "Pengukuran Kinerja Menggunakan Model Performance Prism (Studi Kasus di Perusahaan Makanan).," In: *Proceedings 6th National Industrial Engineering Conference (NIEC-6)*. pp. 108–115. *Universitas Surabaya*, Surabaya (2011).
- [29] Suliantoro H. Perancangan sistem pengukuran kinerja dengan metode performance prism (Studi Kasus di Plaza Hotel Semarang). *Jti Undip: Jurnal Teknik Industri*. 2007;2(2):49-64.

- [30] Putri AR, Mas'ud A, Mayangsari S. Pengukuran kinerja perusahaan menggunakan metode performance prism (Studi kasus di cendana offset fokus intermedia grup). *Performa: Media Ilmiah Teknik Industri*. 2016;15(2).
- [31] A.R. Putri, A. Mas'ud, S. Mayangsari, and Y. -, "Pengukuran Kinerja Perusahaan Menggunakan Metode Performance Prism (Studi Kasus di Cendana Offset Fokus Intermedia Grup).," *PERFORMA: Media Ilmiah Teknik Industri*. vol. 15, no. 2, pp. 146–153, 2016.