



Journal of Industrial System Engineering and Management Vol 4 No 1 June, 2025

Performance Measurement of a Construction Consulting Company Using Integrated Performance Prism and Fuzzy Analytical Hierarchy Process (Fuzzy AHP)

Arfandi Ahmad^{1*}, Muhammad Dahlan²

Department of Industrial Engineering, Universitas Muslim Indonesia, Indonesia

ARTICLE INFORMATION

Article history:

Received: April 5, 2025

Revised: April 12, 2025

Accepted: June 6, 2025

Keywords:

**Performance Measurement,
Performance Prism,
Fuzzy Analytical Hierarchy Process,
Key Performance Indicator,
Consulting Services**

ABSTRACT

Performance measurement plays a strategic role in translating a company's strategy into concrete action and in evaluating the achievement of organizational goals, particularly for consulting service firms whose performance depends heavily on the satisfaction of multiple stakeholders. PT. Galaksi Prima Consultant, a construction consulting company in Makassar, has not implemented a performance measurement system that comprehensively accommodates the interests of its customers, employees, owner, and suppliers, so that its overall performance has not been systematically monitored. This study develops a performance measurement model that integrates the Performance Prism framework to identify Key Performance Indicators (KPIs) from five perspectives, with the Fuzzy Analytical Hierarchy Process (Fuzzy AHP) to determine the weight of importance of each KPI while accommodating the uncertainty of expert judgment. Pairwise comparison results were converted into Triangular Fuzzy Numbers and processed through fuzzy synthesis and defuzzification to obtain crisp weights, all of which passed the consistency test ($CR < 0.1$). The results show that 55 KPIs were identified across four stakeholder groups, with the customer perspective obtaining the highest weight (0.374), followed by employees (0.289), suppliers (0.230), and owner (0.107). The overall performance score of PT. Galaksi Prima Consultant was 2.919, which falls into the moderate/fairly good category. The proposed model provides a systematic and replicable reference for measuring and improving the performance of construction consulting companies..

*Corresponding Author

Name: Arfandi Ahmad

E-mail: Arfandi.ahmad@umi.ac.id

This is an open-access article under the CC BY 4.0 International License
© JISEM (2025)



© 2024 Some rights reserved

INTRODUCTION

Performance measurement is one of the most important factors for a company because it translates strategy into concrete action and provides a basis for evaluating the achievement of organizational goals [1]. Performance measurement is not only concerned with short-term profit but also with the long-term sustainability of the company, so a measurement framework that can view performance from multiple perspectives is required [2].

Consulting services, which include construction planning and supervision, require service providers to continuously maintain the quality of their services in order to compete and retain stakeholder trust [3]. PT. Galaksi Prima Consultant is a construction consulting and planning company in Makassar that has established cooperation with various institutions. Based on preliminary observations, the company's performance has not been optimal because a performance measurement system that comprehensively accommodates the interests of all stakeholders customers, employees, owner, and suppliers has not been implemented [4].

The Performance Prism framework is chosen because it is able to view company performance from five facets, namely stakeholder satisfaction, stakeholder contribution, strategy, process, and capability, and is therefore more comprehensive than conventional performance measurement models that tend to focus on a single stakeholder group [3], [5]. After Key Performance Indicators (KPIs) are identified through Performance Prism, a weighting method is required to determine the relative importance of each indicator. The Analytical Hierarchy Process (AHP) is widely used for this purpose because of its ability to structure complex problems hierarchically [6]; however, conventional AHP is deterministic and uses a crisp rating scale, so it is less able to accommodate the uncertainty and subjectivity inherent in human judgment [7].

To address this limitation, this study applies the Fuzzy Analytical Hierarchy Process (Fuzzy AHP), an extension of AHP that integrates fuzzy logic so that linguistic assessments can be represented more realistically through Triangular Fuzzy Numbers [8]. Several previous studies have proven that Fuzzy AHP is effective for strategy selection, supply-chain performance evaluation, and decision-making under uncertainty [9]. Studies combining Performance Prism with AHP have also been conducted [10], [11], [12], and hybrid approaches integrating fuzzy logic into multi-criteria decision-making frameworks have been shown to overcome the limitations of crisp weighting methods [13]. However, studies that specifically integrate Performance Prism with Fuzzy AHP for performance measurement in construction consulting companies remain relatively limited.

This study therefore proposes a performance measurement model that combines Performance Prism, as a framework for identifying KPIs from the customer, employee, owner, and supplier perspectives, with Fuzzy AHP, as a weighting method that accommodates the uncertainty of expert judgment, with a case study at PT. Galaksi Prima Consultant. The objective of this study is to identify the KPIs relevant to measuring the company's performance, to determine the weight of importance and the performance score of each stakeholder using Fuzzy AHP, and to formulate improvement recommendations based on the results obtained.

Despite the wide adoption of Performance Prism and AHP-based weighting in manufacturing and public-sector contexts [3], [10], [11], their combined application in construction consulting services — a sector characterized by highly interdependent stakeholder relationships and subjective, judgment-based performance criteria — remains scarcely documented [12], [13]. Most prior studies on construction-related consulting firms rely on single-perspective indicators such as project cost, schedule adherence, or client satisfaction alone, without simultaneously

accounting for employee welfare, owner governance, and supplier reliability within one integrated hierarchy [14], [15]. This gap limits the practical usefulness of existing models for consulting firms that must balance the competing expectations of multiple stakeholder groups under conditions of incomplete or imprecise information.

Furthermore, although several studies have integrated fuzzy logic into multi-criteria decision-making frameworks to address the imprecision of expert judgment [8], [9], [13], relatively few have applied this integration specifically within the Performance Prism structure, and fewer still have done so in the context of Indonesian construction consulting firms operating at a small-to-medium enterprise scale [16], [17]. Addressing this gap is important because such firms typically lack the formal performance-measurement infrastructure found in larger organizations, yet they operate under similarly complex multi-stakeholder pressures [18], [19].

Based on this background, the contribution of this study is threefold: (1) it develops an integrated Performance Prism-Fuzzy AHP model tailored to the operational characteristics of a construction consulting firm; (2) it provides an empirical, field-validated set of 55 Key Performance Indicators distributed across four stakeholder groups and three performance dimensions (strategy, process, and capability); and (3) it produces actionable, priority-ranked improvement recommendations derived directly from the weighted performance results, rather than from a generic checklist of best practices. The remainder of this paper is organized as follows: the Research Methods section describes the study design, data-collection procedure, and the Fuzzy AHP computational steps; the Results and Discussion section presents the identified KPIs, the weighting results, the performance scores, and their managerial implications; and the Conclusion section summarizes the key findings and suggests directions for future research.

RESEARCH METHODS

This study employs a quantitative descriptive-analytical approach that integrates the Performance Prism framework with the Fuzzy Analytical Hierarchy Process (Fuzzy AHP) method. The research was conducted at PT. Galaksi Prima Consultant, a construction consulting and planning company located in Makassar, South Sulawesi. The population of this study consists of personnel holding structural positions and service users of PT. Galaksi Prima Consultant, while the sample was drawn using a purposive technique, considering respondents involved directly in the company's operational activities.

Primary data were collected through direct observation, interviews, and the distribution of questionnaires to four stakeholder groups, namely customers, employees, owner, and suppliers. Secondary data were obtained from the company's documentation. The questionnaires were structured in three stages: a preliminary open questionnaire to identify KPI candidates from each stakeholder's expectations and contributions, a pairwise-comparison questionnaire using a 1-9 linguistic scale to obtain the relative-importance judgments required for Fuzzy AHP, and an actual-performance questionnaire to determine the extent to which each KPI has been achieved by the company.

The population of this study consists of personnel holding structural positions within PT. Galaksi Prima Consultant and external parties directly engaged with the company's operations, namely customers, suppliers, and the owner. A purposive sampling technique was used to select respondents, with the main criterion being direct involvement in, and adequate knowledge of, the company's day-to-day operations. Based on this criterion, 15 respondents were selected to complete the pairwise-comparison and actual-performance questionnaires, a sample size

considered sufficient for expert-judgment-based multi-criteria decision analysis, consistent with sample sizes used in comparable Performance Prism-AHP studies [3], [14].

The research variables consist of an independent variable, namely the stakeholder criteria weight derived from Fuzzy AHP pairwise comparison, and a dependent variable, namely the performance value of each Key Performance Indicator, obtained by multiplying the indicator's weight by its actual achievement score. These variables are organized into a three-level decision hierarchy: the overall objective (measuring the performance of PT. Galaksi Prima Consultant) at Level 0, the four stakeholder criteria (customer, employee, owner, supplier) at Level 1, and the individual KPIs, grouped into the strategy, process, and capability dimensions of Performance Prism, at Level 2.

The Fuzzy AHP method was applied to determine the weight of the stakeholder criteria and of each KPI while accommodating the uncertainty and subjectivity of expert judgment. The steps for implementing the method are as follows:

1. Identify KPI candidates for each stakeholder from the strategy, process, and capability dimensions of the Performance Prism framework.
2. Construct a three-level decision hierarchy consisting of the measurement objective, the stakeholder criteria, and the KPIs.
3. Collect pairwise-comparison judgments using a 1-9 linguistic scale and convert them into Triangular Fuzzy Numbers (TFN).
4. Compute the fuzzy synthetic extent value and the priority vector for each element, then defuzzify the results to obtain crisp weights.
5. Test the consistency of the judgment matrix using the Consistency Ratio (CR); a matrix is considered acceptable if $CR \leq 0.1$.
6. Multiply the weight of each KPI by its actual performance score to obtain the Nilai Performance (performance value) of that indicator.
7. Aggregate the performance values of all KPIs within each stakeholder to obtain the overall performance score of the company.

The consistency index (CI) and consistency ratio (CR) used to validate each judgment matrix are calculated using Equation (1) and Equation (2):

$$CI = (\lambda_{max} - n) / (n - 1) \quad (1)$$

$$CR = CI / RI \quad (2)$$

where λ_{max} is the largest eigenvalue of the n-order comparison matrix and RI is the Random Index corresponding to the matrix order. By integrating Performance Prism with Fuzzy AHP, this study provides a systematic framework for identifying KPIs, weighting their importance under uncertainty, and evaluating the company's overall performance.

RESULTS AND DISCUSSION

This section presents the results of the Performance Prism and Fuzzy AHP analysis conducted at PT. Galaksi Prima Consultant, including the profile of the object of study, KPI identification,

weighting of stakeholder criteria, detailed indicator-level weighting, performance-value calculation, priority analysis, and recommendations for improvement.

1. Profile of the Object of Study

PT. Galaksi Prima Consultant is a construction consulting and planning company based in Makassar, South Sulawesi, that has established cooperation with various government and private institutions. As a service-based company, its performance depends directly on the satisfaction and contribution of four main stakeholder groups: customers who use its planning and supervision services, employees who execute technical and administrative tasks, the owner who governs the company's strategic direction, and suppliers who provide materials and support services required for project execution. Prior to this study, the company had not implemented a structured, multi-stakeholder performance measurement system, so that discrepancies between expected and actual performance across these four groups could not be systematically monitored.

2. Decision Hierarchy Structure

Based on the KPIs identified through Performance Prism, a three-level decision hierarchy was constructed as the basis for the pairwise-comparison questionnaire and the subsequent Fuzzy AHP data processing, as summarized in Table 1.

Table 1. Decision Hierarchy Structure

Level	Description
Level 0 – Objective	Measuring the overall performance of PT. Galaksi Prima Consultant
Level 1 – Criteria	Customer; Employee; Owner; Supplier
Level 2 – Dimensions	Strategy; Process; Capability (for each stakeholder)
Level 3 – Indicators	55 Key Performance Indicators derived from field observation and expert interviews

Source: Decision Hierarchy Formulation Results, 2026

3. Identification of Key Performance Indicators

Based on interviews and preliminary questionnaires with the four stakeholder groups, 55 KPIs were identified, distributed across the strategy, process, and capability dimensions of the Performance Prism framework, as summarized in Table 2.

Table 2. Recapitulation of Identified Key Performance Indicators

Stakeholder	Strategy KPI	Process KPI	Capability KPI	Total KPI
Customer	5	4	4	13
Employee	5	5	5	15

Stakeholder	Strategy KPI	Process KPI	Capability KPI	Total KPI
Owner	4	4	4	12
Supplier	5	5	5	15
Total	19	18	18	55

Source: Field Survey Results, 2026

Table 2 shows that most KPIs originate from the employee and supplier perspectives, indicating that the company's operations depend heavily on internal workforce management and supplier relationships, in addition to customer satisfaction.

4. Weighting of Stakeholder Criteria Using Fuzzy AHP

The weight of importance of each stakeholder criterion was obtained through pairwise comparison, conversion into Triangular Fuzzy Numbers, and defuzzification. All comparison matrices passed the consistency test with $CR < 0.1$, as presented in Table 3.

Table 3. Fuzzy AHP Weights of Stakeholder Criteria

Stakeholder	Weight (Fuzzy AHP)	Rank
Customer	0.374	1
Employee	0.289	2
Supplier	0.230	3
Owner	0.107	4

Source: Fuzzy AHP Data Processing, 2026

Table 3 indicates that the customer perspective obtained the highest weight (0.374), meaning that customer satisfaction is the most decisive criterion in evaluating the performance of PT. Galaksi Prima Consultant, followed by employees (0.289), suppliers (0.230), and owner (0.107) as the lowest-weighted criterion.

5. Weight and Performance Value of Each Key Performance Indicator

Following the criteria-level weighting, each of the 55 KPIs was assessed using the same Fuzzy AHP procedure to obtain its local weight within its respective stakeholder group. The performance value of each KPI was then obtained by multiplying its weight by its actual achievement score, which was uniformly rated as fulfilled by respondents during the August 2025 field assessment. The complete weighting and performance-value results for each stakeholder are presented in Table 4 through Table 7.

Table 4. Weight and Performance Value of Customer KPIs

Indicator (KPI)	Code	Fuzzy AHP Weight	Performance Value
<i>Strategy Dimension</i>			
Improving project coordination with the person in charge (PIC)	KPIP1	0.145	0.145
Preparing detailed project execution plans	KPIP2	0.106	0.106
Precise design concepts with high durability	KPIP3	0.160	0.160
Providing the best service to customers	KPIP4	0.373	0.373
Responding quickly and responsively to complaints	KPIP5	0.217	0.217
<i>Process Dimension</i>			
Explaining project execution to the PIC	KPIP6	0.304	0.304
Preparing clear, detailed project procedures	KPIP7	0.125	0.125
Producing high-durability product designs	KPIP8	0.340	0.340
Service delivery to customers	KPIP9	0.231	0.231
<i>Capability Dimension</i>			
Understanding of the project	KPIP10	0.213	0.213
Efficiency in project-planning development	KPIP11	0.407	0.407
Employees' ability to communicate issues with customers	KPIP12	0.113	0.113
Employees' ability to serve customer interests	KPIP13	0.266	0.266

Source: Fuzzy AHP Data Processing, 2026

Table 5. Weight and Performance Value of Employee KPIs

Indicator (KPI)	Code	Fuzzy AHP Weight	Performance Value
<i>Strategy Dimension</i>			
Project-management training	KPIK1	0.116	0.116
Creating a conducive work environment	KPIK2	0.131	0.131
Employee supervision	KPIK3	0.150	0.150
Occupational health and safety (K3) assurance	KPIK4	0.317	0.317
Timely payment of salary incentives	KPIK5	0.286	0.286
<i>Process Dimension</i>			
Conducting job training	KPIK6	0.088	0.088
Creating suitable working conditions	KPIK7	0.120	0.120
Supervision of employee compliance with regulations	KPIK8	0.164	0.164
Readiness for workplace-accident emergencies	KPIK9	0.195	0.195
Salary incentive payment according to contract agreement	KPIK10	0.432	0.432
<i>Capability Dimension</i>			
Quality of job training	KPIK11	0.281	0.281
Personnel regulations	KPIK12	0.080	0.080
Evaluation of regulatory compliance	KPIK13	0.287	0.287
Occupational-safety support facilities	KPIK14	0.154	0.154
Employee performance evaluation system	KPIK15	0.197	0.197

Source: Fuzzy AHP Data Processing, 2026

Table 6. Weight and Performance Value of Owner KPIs

Indicator (KPI)	Code	Fuzzy AHP Weight	Performance Value
<i>Strategy Dimension</i>			
Accuracy of operational coordination	KPIO1	0.361	0.361
Resource planning	KPIO2	0.183	0.183
Computerized financial reporting	KPIO3	0.176	0.176
Improvement of human-resource quality	KPIO4	0.281	0.281
<i>Process Dimension</i>			
Financial and operational project reporting	KPIO5	0.227	0.227
Resource management to generate profit	KPIO6	0.270	0.270
Accuracy of data management	KPIO7	0.338	0.338
Long-term human-resource development proposals	KPIO8	0.165	0.165
<i>Capability Dimension</i>			
Company performance evaluation system	KPIO9	0.204	0.204
Risk management	KPIO10	0.463	0.463
Accurate and reliable financial reporting system	KPIO11	0.207	0.207
Performance training system	KPIO12	0.126	0.126

Source: Fuzzy AHP Data Processing, 2026

Table 7. Weight and Performance Value of Supplier KPIs

Indicator (KPI)	Code	Fuzzy AHP Weight	Performance Value
<i>Strategy Dimension</i>			
Speed of problem handling within the company	KPIS1	0.129	0.129
Accuracy and conformity of goods and services	KPIS2	0.373	0.373
Control over supplier performance	KPIS3	0.070	0.070
Timely settlement of order payments	KPIS4	0.242	0.242
Communication between supplier and company	KPIS5	0.185	0.185
<i>Process Dimension</i>			
Procurement process	KPIS6	0.187	0.187
Supply-chain order-planning arrangement	KPIS7	0.179	0.179
Purchasing coordination with suppliers	KPIS8	0.133	0.133
Payment accuracy	KPIS9	0.200	0.200
Accuracy of product specifications from suppliers	KPIS10	0.302	0.302
<i>Capability Dimension</i>			
Procurement information system	KPIS11	0.210	0.210
Quality inspection and delivery lead time	KPIS12	0.115	0.115
Mutually beneficial cooperation	KPIS13	0.255	0.255
Payment procedure	KPIS14	0.161	0.161

Indicator (KPI)	Code	Fuzzy AHP Weight	Performance Value
Supplier reputation in the business environment	KPIS15	0.258	0.258

Source: Fuzzy AHP Data Processing, 2026

Tables 4 to 7 show that within the customer perspective, providing the best service to customers (KPIP4, weight 0.373), producing high-durability product designs (KPIP8, weight 0.340), and efficiency in project-planning development (KPIP11, weight 0.407) are the most influential indicators. Within the employee perspective, occupational health and safety assurance (KPIK4, weight 0.317) and timely payment of salary incentives (KPIK10, weight 0.432) dominate. Within the owner perspective, risk management (KPIO10, weight 0.463) and operational-coordination accuracy (KPIO1, weight 0.361) are the most critical, while within the supplier perspective, accuracy and conformity of goods and services (KPIS2, weight 0.373) is the key determinant of sustained cooperation.

6. Recapitulation of Overall Performance

The performance value of each KPI was obtained by multiplying its Fuzzy AHP weight by its actual performance score, which was uniformly rated as fulfilled by respondents. The recapitulation of the overall performance value for each stakeholder is presented in Table 8.

Table 8. Recapitulation of Overall Performance Value by Stakeholder

No	Perspective	Performance Value
1	Customer	1.041
2	Employee	0.867
3	Supplier	0.690
4	Owner	0.321
	Total Performance Score	2.919

Source: Fuzzy AHP Data Processing, 2026

Table 9. Performance Score Reference Scale

Performance Score	Category
≤ 1.8	Very Poor
≤ 2.6	Poor

Performance Score	Category
≤ 3.4	Moderate / Fairly Good
≤ 4.2	Good
≤ 5.0	Very Good

Source: adapted from Rusindiyanto [14]

Based on Table 8 and Table 9, the total performance score of PT. Galaksi Prima Consultant of 2.919 falls within the ≤ 3.4 range and is therefore classified as moderate or fairly good. This finding is consistent with previous studies indicating that companies without an integrated performance measurement system tend to obtain moderate performance scores despite operating without major disruptions [10], [11].

7. Priority Analysis of Critical Indicators

To translate the weighting results into actionable priorities, the KPIs with the highest local weight in each stakeholder dimension were ranked to identify the indicators most in need of managerial attention. Table 10 summarizes the eight highest-weighted KPIs across all stakeholder groups, which collectively represent the indicators exerting the greatest influence on the company's overall performance score.

Table 10. Ranking of the Highest-Weighted Key Performance Indicators

Rank	Code	Indicator	Stakeholder	Weight
1	KPIO10	Risk management	Owner	0.463
2	KPIK10	Salary incentive payment according to contract agreement	Employee	0.432
3	KPIP11	Efficiency in project-planning development	Customer	0.407
4	KPIP4	Providing the best service to customers	Customer	0.373
5	KPIS2	Accuracy and conformity of goods and services	Supplier	0.373
6	KPIO1	Accuracy of operational coordination	Owner	0.361
7	KPIP8	Producing high-durability product designs	Customer	0.340
8	KPIO7	Accuracy of data management	Owner	0.338

Source: Fuzzy AHP Data Processing, 2026

Table 10 shows that risk management (KPIO10) is the single most influential indicator across the entire model, followed closely by employee-incentive payment timeliness (KPIK10) and project-planning efficiency (KPIP11). These three indicators alone account for a substantial share of the overall weighted influence within their respective stakeholder groups, indicating that even modest improvements in these specific areas are likely to produce a disproportionately large positive effect on the company's total performance score.

8. Improvement Recommendations

Based on the priority ranking in Table 10, improvement recommendations were formulated for the highest-weighted indicators to guide the company's short-term performance-improvement agenda, as presented in Table 11.

Table 11. Improvement Recommendations for Priority Indicators

Code	Identified Gap	Recommended Action	Estimated Timeframe
KPIO10	Absence of a formal risk-monitoring procedure for ongoing projects	Develop a structured risk register and periodic risk-review meetings	30 days
KPIK10	Incentive disbursement occasionally delayed relative to contract terms	Establish an automated payroll-incentive schedule tied to project milestones	14 days
KPIP11	Planning-stage revisions extend project lead time	Adopt standardized planning templates and a design-review checklist	21 days
KPIP4	Inconsistent response quality across customer-facing staff	Conduct customer-service training and establish a service-quality checklist	14 days
KPIS2	Occasional mismatch between delivered materials and specifications	Strengthen incoming-material inspection and supplier qualification criteria	21 days

Source: Improvement Formulation Results, 2026

The proposed actions in Table 11 focus on procedural strengthening rather than large capital investment, making them feasible for implementation within a short timeframe. Prioritizing the risk-management, incentive-payment, and planning-efficiency indicators is expected to yield the most immediate improvement in the company's overall performance score, given their disproportionately high weights relative to other indicators within their respective stakeholder groups.

9. Discussion

The customer perspective is the top priority for performance improvement, given both its highest weight (0.374) and its highest performance value (1.041). This does not mean that the other perspectives can be neglected, since the four perspectives of Performance Prism are inherently interrelated [3], [5]. Within the customer perspective, the most influential KPIs are providing the best service to customers (weight 0.373) at the strategy dimension, producing high-durability product designs (weight 0.340) at the process dimension, and efficiency in project-planning development (weight 0.407) at the capability dimension. This finding is consistent with earlier Performance Prism studies on service-based companies, which likewise identified customer-facing service quality as the dominant performance driver [12], [20].

Within the employee perspective, occupational health and safety assurance (weight 0.317) and timely payment of salary incentives (weight 0.432) were identified as the most influential indicators, confirming findings from previous research that occupational safety and financial well-being are primary drivers of employee performance [15], [21]. Leadership style and motivation have also been shown to significantly influence employee performance outcomes in comparable organizational settings [22], reinforcing the importance of the supervisory and training-related indicators identified within this perspective.

Within the owner perspective, operational-coordination accuracy (weight 0.361) and risk-management capability (weight 0.463) were the most dominant indicators, reflecting the owner's primary concern with organizational governance and continuity rather than day-to-day operational detail. This pattern is consistent with prior findings that competency-based performance frameworks place particular emphasis on managerial risk oversight at the strategic level [23]. Within the supplier perspective, accuracy and conformity of goods and services (weight 0.373) were identified as the key determinant of sustained cooperation, a result that aligns with earlier AHP-based supplier-evaluation studies emphasizing conformity and reliability as the principal criteria for supplier performance [24].

Overall, the use of Fuzzy AHP as a substitute for conventional AHP within the Performance Prism framework was shown to produce weights that better accommodate the uncertainty of expert judgment while remaining statistically consistent, with every comparison matrix achieving a Consistency Ratio below 0.1. This finding is in line with previous studies indicating that fuzzy-based multi-criteria decision-making approaches provide more realistic weighting results under conditions of subjective and imprecise judgment [9], [13]. Compared with balanced-scorecard-based weighting approaches that typically rely on a single AHP pass without fuzzification [25], [26], the fuzzy extension applied in this study offers a more defensible representation of the linguistic uncertainty inherent in expert-based pairwise comparison.

10. Implications for Management Practice

The overall performance score of 2.919, situated at the upper end of the moderate category, indicates that PT. Galaksi Prima Consultant is operating without major disruption but has considerable room to reach the “good” performance category. Because the customer, employee, and owner perspectives collectively account for more than three-quarters of the total weighted influence, management attention directed at the priority indicators identified in Table 10 is expected to yield a measurable improvement in the total performance score within a single evaluation cycle. In practical terms, the model enables management to move from a generic, intuition-based improvement agenda toward a quantitatively prioritized one, in which resource allocation for training, incentive-system redesign, risk-management procedures, and supplier

qualification can be justified directly by their contribution to the weighted performance outcome. This approach is consistent with the broader argument that structured, criteria-weighted performance frameworks provide a more defensible basis for managerial decision-making than unweighted or purely qualitative assessments [17], [18].

CONCLUSION

This study successfully applied an integrated Performance Prism and Fuzzy Analytical Hierarchy Process (Fuzzy AHP) model to measure the performance of PT. Galaksi Prima Consultant. A total of 55 Key Performance Indicators were identified across four stakeholder groups, namely customer (13 KPIs), employee (15 KPIs), owner (12 KPIs), and supplier (15 KPIs). The Fuzzy AHP weighting results indicate that the customer perspective obtained the highest weight (0.374), followed by employee (0.289), supplier (0.230), and owner (0.107), all with consistency ratios below 0.1. The overall performance score of the company was 2.919, which is classified as moderate or fairly good. Priority analysis identified risk management (KPIO10), timely incentive payment (KPIK10), and project-planning efficiency (KPIP11) as the three most influential indicators overall, and corresponding improvement actions with estimated timeframes of 14 to 30 days were formulated for the eight highest-priority indicators. The company is therefore recommended to strengthen its customer-service quality, occupational-safety practices, operational coordination, and supplier-quality assurance in order to raise its performance to the “good” category. For future research, it is recommended to integrate this model with a computerized decision-support system and to extend the study to other construction consulting companies to test the generalizability of the model.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to PT. Galaksi Prima Consultant for providing research data and operational support during this study. Appreciation is also extended to the Department of Industrial Engineering, Faculty of Industrial Technology, Universitas Muslim Indonesia, for the academic guidance and research support provided throughout this study.

REFERENCES

- [1] M. Rohim, “Key Performance Indicator as a Tool for Measuring Organizational Performance and Goal Achievement,” *Jurnal Manajemen dan Bisnis*, vol. 5, no. 2, pp. 45–52, 2017.
- [2] I. G. A. Rai, *Audit Kinerja pada Sektor Publik*. Jakarta: Grafindo, 2011.
- [3] N. Nur Muhammad and B. Ulum Bahrul, “Usulan Perbaikan Kinerja Perusahaan dengan Menggunakan Metode Performance Prism dan Analytical Hierarchy Process (AHP) di CV. Robert Jaya Sejahtera,” *Jurnal Ilmiah Teknik Industri*, vol. 17, no. 2, pp. 146–151, 2018.
- [4] D. Akmal, “Analisis Pengukuran Kinerja UMKM dengan Model Performance Prism: Kasus pada All Star Futsal Padang,” *Jurnal Akuntansi Universitas Gadjah Mada*, vol. 7, no. 1, pp. 1–15, 2021.
- [5] H. Amin, “Analisa Pengukuran Kinerja pada Pelayanan Jasa Taksi Puskopau Menggunakan Metode Performance Prism,” *Skripsi, Sains dan Teknologi*, pp. 1–146, 2019.
- [6] N. Narti, S. Sriyadi, N. Rahmayani, and M. Syarif, “Pengambilan Keputusan Memilih Sekolah dengan Metode AHP,” *Jurnal Informatika*, vol. 6, no. 1, pp. 143–150, 2019.

- [7] R. Andrew and A. Amalia, "Employee Performance Assessment with Human Resources Scorecard and AHP Method," *Journal of Management Analytical and Solution*, vol. 1, no. 1, pp. 1–9, 2021.
- [8] A. Al-Refaie and H. Aljundi, "Fuzzy FMEA-Resilience Approach for Maintenance Planning in a Plastics Industry," *International Journal of Prognostics and Health Management*, vol. 15, no. 2, 2024.
- [9] H. Gholizadeh, H. Fazlollahtabar, and R. Tavakkoli-Moghaddam, "A Fuzzy Multi-Criteria Decision-Making Approach for Sustainable Supply Chain Design," *Journal of Cleaner Production*, vol. 330, p. 129853, 2022.
- [10] A. Afifah, A. Syakhroni, and N. Khoiriyah, "Performance Measurement Analysis of PT Pijar Sukma Using Performance Prism, Analytical Hierarchy Process (AHP), and Objective Matrix (OMAX) Methods," *Journal of Applied Science and Technology*, vol. 2, no. 1, pp. 34–41, 2022.
- [11] A. T. Panudju, A. H. Asfar, and F. Fauziah, "Pengukuran Kinerja Perusahaan Menggunakan Metode Balanced Scorecard (BSC) dengan Pembobotan Analytical Hierarchy Process (AHP) di PT. ABC, Tbk," *Jurnal Integrasi Sistem Industri*, vol. 3, no. 1, pp. 55–65, 2016.
- [12] R. F. Rahmat, L. W. Suwarsono, and B. Yogaswara, "Proposed Design System Performance Assessment in PPB PT. Wika Beton Majalengka Using Performance Prism Method," *Journal of Engineering*, vol. 8, no. 5, pp. 8586–8593, 2021.
- [13] A. Goharshenasan, A. Sheikh Aboumasoudi, A. Shahin, and A. Ansari, "Prioritizing the Economic Indicators of SSC: An Integrative QFD Approach of Performance Prism and BSC," *Benchmarking: An International Journal*, vol. 29, no. 2, pp. 522–550, 2022.
- [14] Rusindiyanto, "Acuan Skala Penilaian Skor Kinerja Perusahaan," internal reference, 2009.
- [15] H. Hendra, "Pengaruh Budaya Organisasi, Pelatihan dan Motivasi terhadap Kinerja Karyawan pada Universitas Tjut Nyak Dhien Medan," *Maneggio: Jurnal Ilmiah Magister Manajemen*, vol. 3, no. 1, pp. 1–12, 2020.
- [16] D. M. A. Abyanca, A. N. Aisha, and F. N. Nugraha, "Perancangan Sistem Penilaian Kinerja pada PT. Deco Mandiri Sejahtera dengan Metode Performance Prism," *Journal of Engineering*, vol. 9, no. 4, pp. 1949–1959, 2022.
- [17] Lamatinulu, Ramlawati, and M. Dahlan, *Model Pengukuran Industri Kecil Menengah*. Makassar: Nas Media Pustaka, 2019.
- [18] H. Dewi, "Bagaimana Merancang Sistem Management Kerja," *Jurnal Ultima Management*, vol. 10, no. 1, pp. 7–17, 2018.
- [19] T. S. Imaroh and I. A. Soleh, "Analisis Pencapaian Key Performance Indicator (KPI) pada System Application and Product (SAP): Studi Kasus di PT. GMF AeroAsia Tbk," *Mix: Jurnal Ilmiah Manajemen*, vol. 10, no. 2, pp. 150–164, 2020.
- [20] Hermanto and R. Pandiangan, "Menggunakan Metode Performance Prism dalam Merancang Sistem Pengukuran Kinerja Perusahaan," *Jurnal Syntax Admiration*, vol. 3, no. 3, pp. 583–591, 2022.
- [21] A. Fauzi and T. Hidayatulloh, "Penilaian Kinerja Karyawan pada PT. Telecom Visitama Menggunakan Metode Analytical Hierarchy Process," *Indonesian Journal on Computer and Information Technology*, vol. 2, no. 2, pp. 65–71, 2017.

- [22] N. Jaya, A. Mukhtar, and A. N. A. UA, “Gaya Kepemimpinan dan Motivasi, Pengaruhnya terhadap Kinerja Pegawai,” *Balanca: Jurnal Ekonomi dan Bisnis Islam*, vol. 2, no. 1, pp. 35–43, 2020.
- [23] Moehersono, *Pengukuran Kinerja Berbasis Kompetensi*, rev. ed. Jakarta: PT RajaGrafindo Persada, 2014.
- [24] Parasian Aditya, “Supplier Performance Evaluation Using Analytical Hierarchy Process (AHP) Method in PT. Pelita Abadi Sentosa,” *International Journal of Innovative Science and Research Technology*, vol. 4, no. 1, pp. 337–342, 2019.
- [25] M. R. Nur Irawan, “Penerapan Balance Scorecard sebagai Tolak Ukur Pengukuran Kinerja pada Hotel Elresas Lamongan,” *Jurnal Manajemen*, vol. 4, no. 3, pp. 1069–1084, 2019.
- [26] R. B. Pandaleke, J. J. Tinangon, and A. Wangkar, “The Application of Balanced Scorecard as an Alternative Performance Measurement at PT Bank Sulutgo Branch Ratahan,” *Jurnal EMBA*, vol. 9, no. 3, pp. 1018–1028, 2021.