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Proposed Framework Of A Knowledge-Based Performance Management System (KBPMS) For Furniture Smes: A Case Study Of Cv Mulya Pratama Putra

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Abstract

A Knowledge-Based Performance Management System (KBPMS) is designed for performance management effectiveness in CV Mulya Pratama Putra, an Indonesian SME that specializes in wooden and rattan furniture exports. The SME witnessed declining operation and financial performance. The KBPMS uses a combination of external analysis methods including PESTEL and Porter's Five Forces analysis and internal capability analysis methods that include VRIO and benchmarking. To prioritize improvements, an AHP method will be adopted. Analysis and findings have shown that there are major gaps in performance with regards to financial, customer, internal process, and resource capabilities. The AHP analysis also confirms Process Variables and Operational Quality factors as the main priorities. A KBPMS model will enable a proper and systematic determination of indicators and preparation of an improvement plan. KBPMS will enable an Indonesian SME like Mulya Pratama Putra to make more knowledge-driven decisions and improve its global competitiveness and ability to export.

Keywords: *KBPMS; performance; AHP; furniture; SME.*

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INTRODUCTION

The Indonesian furniture industry keeps on expanding, especially with regard to exports, as it requires furniture suppliers from all around the world to attain serial production and competitive prices as well as efficient delivery times (Mordor Intelligence, 2025). Nevertheless, there continues to be room for improvement within Indonesian furniture suppliers, as SMES nonetheless remain struggling with regards to stable business operation and efficient business performance measurement and control (Bhagwat and Sharma, 2007). The Indonesian furniture exporting firm CV Mulya Pratama Putra, exporting furniture made from wood and rattan materials, experiences various problems. It struggles with reduced revenues, low usage rates, low production synchronization, and a lack of an efficient performance measurement and control system.

To address these challenges, this research proposes the establishment of a Knowledge-Based Performance Management System (KBPMS). KBPMS will be capable of combining organizational knowledge and analytical capabilities, helping the firm systematically assess and improve performance based on organizational knowledge (Wibisono, 2016). The KBPMS will be created based on an analysis of the organization's external business environment with PESTEL and Porter Five Forces

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Analysis, an internal organizational capability analysis with VRIO Analysis, and a benchmarking analysis. To identify which variables are most important for performance improvement, the research will employ the Analytic Hierarchy Process technique. By taking all these steps together, it will be possible to develop a performance management system that aligns business operations with strategy.

It is expected that the new KBPMS will allow for better structure with regards to evaluating current performance, pointing out weaknesses, and allocating efforts on areas with maximum impact. By adopting better consistency and knowledge with regards to performance measurement, it will enable CV Mulya Pratama Putra to improve its operational strength and better prepare itself for competition within the global furniture industry.

METHODOLOGY

This study employs a descriptive and analytical method in formulating the Knowledge-Based Performance Management System with specific focus on the operating environment of CV Mulya Pratama Putra. The research will combine elements of qualitative and quantitative research. Thus, internal and external performance aspects can be thoroughly analyzed, and at the same time, specific and measurable priorities will be created. Secondary research will include reports on the industry and sector, as well as scholarly materials, for support on the analysis.

The research design progresses with several steps. First, an environmental analysis was carried out using PESTEL and Porter's Five Forces Analysis tools on how market forces and pressures affect the firm at large (Porter, 2008; Johnson et al., 2017). Next, an internal analysis took place with VRIO. It identifies and assesses an organization's internal capabilities based on resources with special focus on operations, people, and organizational processes in an organization (Barney, 1991).

Benchmarking was subsequently employed to detect gaps in performance with regard to financial, customer, internal process, and resource capability views. The process made it possible for the research to measure gaps that exist between the actual performance and expected standards either within an industry or within an organization itself (Camp, 1989).

To identify these priorities, the use of the Analytical Hierarchy Process (AHP) method was adopted as a means of making these decisions. It was chosen because it allows several criteria to be compared methodically and facilitated the measurement and weighting of qualitative judgments based on these variables for performance, giving an indication of importance relative to every variable (Saaty, 1980). These comparisons were done with the help of managers and operational supervisors who were chosen because they had experience within the organization and were directly involved with production and organizational operations. The matrices were analyzed using AHP to find consistency ratios.

The sequence of methods—external analysis, internal capability analysis, benchmarking, and AHP which serves as a basis for developing a KBPMS model. The resultant model synthesizes strategic knowledge with priority on performance and develops a system capable of influencing decisions and improvements at CV Mulya Pratama Putra.

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RESULTS AND DISCUSSION

A Knowledge-Based Performance Management System (KBPMS) for the CV Mulya Pratama Putra was developed as a solution for declining stability and efficiency in production processes as well as unstructured performance indicators (Wibisono, 2016). The finding encapsulates the process of identifying variables and linking them with AHP-based priorities.

Internal and External Analysis as the Basis for Performance Variable Selection

Table 1. Summary of Internal and External Analysis Results

No.	Analysis Type	Key Findings	Implication for Performance Variables
1	PESTEL	Export regulation, sustainability requirements, labor availability.	Need for quality consistency and process reliability indicators.
2	Porter's Five Forces	High buyer power, intense competition, supplier dependency.	Importance of delivery reliability, cost efficiency.
3	VRIO	Skilled labor available, weak technology utilization.	Focus on employee productivity and machine utilization.
4	SWOT/TOWS Analysis	Strong market access, weak internal coordination.	Need for structured KPIs and performance linkage.

The internal and external analyses were done with the intention of making sure that the variables chosen for KBPMS relate well with what CV Mulya Pratama Putra experiences. PESTEL and Porter's Five Forces on external analysis clearly explain that it acts within a competitive export market with strong buying power and emphasizing product quality, on-time delivery, and cost-effectiveness. It requires performance measures based on revenue growth, reliable suppliers, and defect-free products.

The internal analysis conducted with the help of VRIO matrix and SWOT identifies that even though there are qualified people and opportunities available, there is no coordinated effort, quality control, or optimal use of production resources. The factors, which were major internal limitations, included low utilization of machines and lack of clarity about performance. This clearly establishes the need for inclusion of factors like utilization rate of machines, productivity of employees, and quality of teamwork as variables within KBPMS.

By incorporating the findings from internal and external analyses, it ensured that there were no random selections among the performance measures. The performance measures were directly associated with challenges and weaknesses within an organization. It served as an excellent foundation for developing a strategy map and AHP.

Strategy Derivation and Performance Variable Identification

The strategy map for the overall strategy of CV Mulya Pratama Putra consisted of three various perspectives, which include: Organizational Results, Internal Processes, and Resource Capability. These three aspects were linked with business objectives and

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needs for improvement and thus formed the foundation for identifying the variables associated with performance.

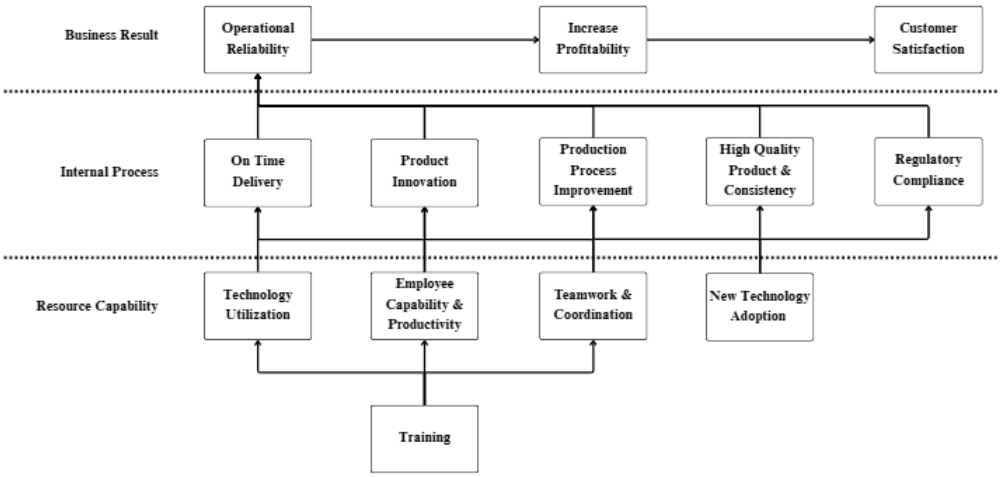

Figure 1. Strategy Map of CV Mulya Pratama Putra

Based on this mapping, variables relating to performance have been identified that denote financial as well as non-financial aspects, operational processes, innovation, marketing, after-sales performances, and core capabilities involving resources like human resources, availability of technology, and organizational capital.

The complete list of indicators used in the KBPMS design is summarized as follows:

Table 2. Performance Metrics for CV Mulya Pratama Putra

Perspective	Aspect	Indicator
Business Result	Financial	Revenue Growth
		Net Profit Margin
		Return on Asset
		Return on Equity
		Current Ratio
		Debt to Equity Ratio
	Non-Financial	Customer Satisfaction Index
		Employee Satisfaction Index
		Supplier Satisfaction Index
Internal Process	Innovation	Number of new products launched annually
	Operation Process	Supplier Delivery Reliability Rate
		Defect Product
		Return Rate of Product
	Marketing	New Customer Growth Rate
	After Sales Service	Complaint Resolution Rate
Resource Capability	Human Resources	Employee Productivity
		Employee Training
	Technological	Machine Utilization Rate
	Organizational Resources	Leadership Index
		Teamwork Quality

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These variables became the foundation for the construction of linkage analysis and priority setting.

Linkage Analysis Between Performance Variables.

To understand the structure of causality among variables, a linkage diagram from interviews and discussion with management, as well as operational data analysis has been created. It should be noted that as feasible indicators for resources, employee productivity, machine usage, and teamwork were directly affected (Guerra-López & Hutchinson, 2013).

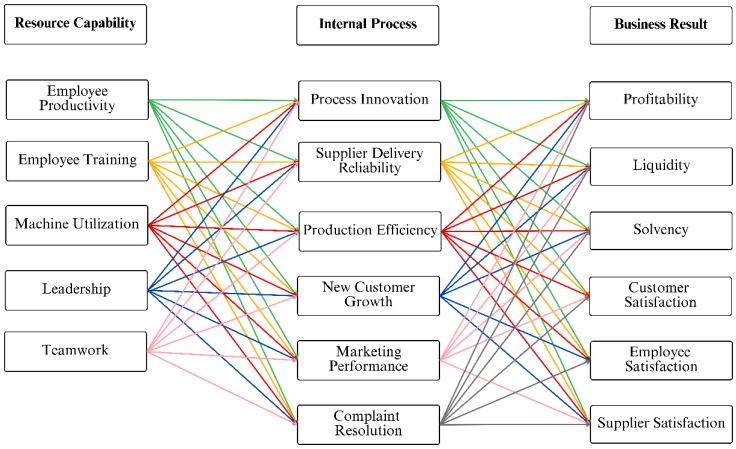

Figure 2. Linkage Variable Diagram of CV Mulya Pratama Putra

The linkage model illustrates that improving resource capabilities (productivity, employee training, machine utilization, organizational readiness) produces cascading effects across operations, leading to enhanced output performance. This validates KBPMS principles emphasizing the integration of processes, knowledge, and performance outcomes.

AHP Results and Indicator Prioritization

AHP analysis was conducted for finding relative importance among the variables for performance on three fronts. Priorities reflected in AHP analysis display that Business Result has maximum importance, which centers on financial variables like revenue growth, ROI, and return on equity. Internal Process ranks next, and variables like reliability of suppliers for deliveries, defect rate, and product return rate have maximum importance. Resource Capability ranks third, and utilization of machines and productivity of employees have maximum importance among these.

Table 3. AHP Weighting Results for CV Mulya Pratama Putra

Perspective	%	Aspect	%	Indicators	%
Business Result	54.0	Financial	83,3	Revenue Growth	38,5
				Net Profit Margin	22,3
				Return on Asset	10,3
				Return on Equity	19,1
				Current Ratio	3.4

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				Debt to Equity Ratio	6,5
		Non-Financial	16,7	Customer Satisfaction Index	55.0
				Employee Satisfaction Index	21.0
				Supplier Satisfaction Index	24.0
Internal Process	29,7	Innovation	9,2	Number of new products launched annually	100.0
		Operation Process	44,5	Supplier Delivery Reliability Rate	49,3
				Defect Product	31,1
				Return Rate of Product	19,6
		Marketing	26,1	New Customer Growth Rate	100.0
		After Sales Service	20,2	Complaint Resolution Rate	100.0
Resource Capability	16,3	Human Resources	24,9	Employee Productivity	85,7
				Employee Training	14,3
		Technology resources	59,4	Machine Utilization Rate	100.0
		Organizational Resources	15,7	Leadership Index	66,7
				Teamwork Quality	33,3

These results make it clear that it is necessary for a company to improve efficiency and capability with regard to operations. It can be noticed that some factors were given more importance because these have been considered as weaknesses with regard to operations at present. These include aspects like reliability, defect reduction, and equipment utilization.

Implementation Plan

The implementation of the proposed KBPMS at CV Mulya Pratama Putra will be done through various steps that include preparation, socialization, training, alignment, and evaluation. The goal here will be to make sure that everyone at all organizational levels, from management down to division heads and employees, distinctly understands and can apply these performance indicators.

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Table 4. Implementation Activities for CV Mulya Pratama Putra

No.	Activities	PIC	Target Audience	Duration (Days)	Tools
1	Preparation Process	PMS PIC (Director)	Management	5	Meeting Rooms, Documents
2	Leadership and Communication Training	External Trainer	Top & Middle Management	3	Training Modules, Slides
3	Presentation on findings of basic information	PMS PIC (Director)	Top & Middle Management	1	Presentation Tools
4	Vision, Mission, Strategy Awareness program	PMS PIC (Director)	Top & Middle Management	1	Slides
5	General Introduction and overview on performance management system	PMS PIC (Director)	Top & Middle Management	1	Slides
6	Presentation on performance management framework	PMS PIC (Director)	Top & Middle Management	1	Presentation Tools
7	Training of PMS to head of each division	PMS PIC (Director)	Division Heads	5	Training Materials
8	Strategic planning in response to the new PMS for each division	PMS PIC (Director)	Division Heads	12	Workshops, Planning Tools
9	Vision, Mission, Strategy Awareness program: Employee level	Head of Each Department	All Employees	3	Presentation Tools, Slides, Booklet
10	General Introduction and overview on performance: Employee level	Head of Each Department	All Employees	2	Handouts, Presentation Tools
11	Implementation Trial Phase	Head of Each Department	All Department	25	System Tools, Feedback Forms
12	Evaluation, diagnosis, and follow up action plan	PMS PIC (Director)	Top & Middle Management	Continuous Process	Surveys, Report

The following table summarizes all the vital steps associated with the implementation process of PMS, beginning with preliminary preparation and awareness campaigns, followed by technical and planning sessions with division heads. Socialization at the employee level helps integrate understanding at an organizational level. The trial and Continuous Evaluation phases enable departments to use PMS and make necessary improvements.

Based on the result, it appears that there is a need for a more structured and measurable performance system at CV Mulya Pratama Putra. The strategy map and linkages analysis provide insights on ways to improve, starting with enhancing resource capabilities relating to machine utilization and employee productivity. Both factors have direct impacts on internal processes and business operations.

The AHP results support these findings and emphasize the importance given to financial results, operational stability, and equipment productivity. Key factors such as revenue growth, reliability of suppliers, rate of defects, and utilization rate are seen

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to be among the drivers that have uncertain impacts. These factors correspond with some challenges that confront the business and include variability of production flow, suppliers' delay, and no set performance metric.

The implementation framework will make it possible for KBPMS use to be consistent among members of the management, division heads, and employees. The systematic and methodical implementation process from creating awareness, aligning with strategy, and piloting will contribute to helping the business make progress towards having data-informed decisions.

Overall, it assures that optimization and improvement in operational efficiency and resource capacity are very necessary for ensuring better financial performance and continued viability as an exporting country. KBPMS forms an integrated platform that enables alignment with strategy and operations at an optimal level.

CONCLUSION

A knowledge-based performance management system specifically suited to the situation within CV Mulya Pratama Putra was created as a result of this research. Various problems associated with performance were discovered. These included poor division connections, role imprecision, inconsistent quality control checks, low process speed, and unstructured performance measurement systems. All these problems were impacting production rate, product quality, cost associated with repeated processes, product delivery on-time, and ultimately the bottom line. All these were verified using PESTEL Analysis, Porter Five Forces Analysis, VRIO Analysis, SWOT Analysis, TOWS Analysis, KPI Benchmarking Study, AHP Analysis, and variable linkages.

The KBPMS structure enabled these findings to be integrated around the vision, mission, and strategy of the business and related them to specific indicators for three different perspectives: business result, internal process, and resource capability. In this manner, any and all opportunities for improvement were ensured to be driven by organizational strategy. Through AHP analysis, it became clear that three important indicators, revenue growth, suppliers' delivery reliability, and rate of utilization, were given prime importance as they have maximum impact on overall performance. It also emerged that most key indicators were untracked.

A finalized KBPMS facilitates a structured KPI and an implementation plan that uses visualization tools for performance measurement and monitoring. A consistent implementation would allow transitioning from a reactive approach to make decisions for solving problems to a plan-and-manage approach.

Overall, it can be seen that developing a KBPMS requires more than developing indicators. Its implementation will be useful for enhancing efficiency, lowering defects and overtime, and ensuring customer satisfaction rates remain extremely high within the furniture sector. The KBPMS will manage costs and projects better. All this will be achieved due to its successful implementation.

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