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Proposed A Performance Management System using KBPMS Framework in The Supply Chain OFI-Cocoa

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ABSTRACT

PT. OC - a prominent cocoa producer specializing in cocoa powder, liquor, and butter – faces challenges in its supply chain inefficiencies. Despite its established market presence, OC experiences challenges in procurement, production, inventory management, and logistics. These inefficiencies are attributed to the absence of a structured performance management system, which hinders the company's ability to align operational activities with strategic objectives and optimize resource utilization. This research aims to address these issues by applying the Key Business Performance Management System (KBPMS) framework, which offers a comprehensive approach to identifying, measuring, and improving operational performance. The research is divided into several stages: (1) Foundation, (2) Basic Information, (3) Design Process, (4) Implementation Process, and (5) Refreshment. Primary data was collected through interviews with key stakeholders. Secondary data was gathered from internal company records and external literature. The study proposes a tailored KBPMS framework for PT. OC. Seventeen Key Performance Indicators (KPIs) were developed to monitor supply chain activities, categorized into three groups: (1) Business Results; (2) Internal Processes; and (3) Resource Capability. The results of this study highlight that a structured performance management system helps to enhance operational efficiency, reduce costs, and support sustainable business growth.

***Keywords**: KBPMS, KPI, Supply Chain Inefficiencies, Cocoa Industry.*

INTRODUCTION

In the modern business world, supply chain management plays a crucial role in maintaining the sustainability and competitiveness of companies, especially in the manufacturing and processing industries. The supply chain encompasses various activities, from raw material procurement and production to the distribution of products to the end consumers. With the increasing complexity of supply chain processes, companies must manage their supply chains efficiently to meet market

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demands and improve customer satisfaction. Additionally, to compete in a globally interconnected market, companies must rely on effective and efficient supply chains (Kleab, 2017).

As part of supply chain management, performance measurement is an essential tool to ensure that every process aligns with company goals. An effective performance measurement system helps companies identify areas for improvement, monitor the success of strategies, and make data-driven decisions. In this context, Key Performance Indicators (KPIs) are metrics used to measure the success of operational aspects, such as production speed, delivery timeliness, and inventory efficiency.

Furthermore, advancements in technology and data management have driven the emergence of more advanced performance management systems, such as the Knowledge-Based Performance Management System (KBPMS). KBPMS combines performance management with knowledge management, enabling companies not only to measure results but also to leverage knowledge to improve future performance. KBPMS-based systems emphasize the effective collection and distribution of information, allowing companies to learn from existing data and continuously innovate to adapt to rapid market changes.

As one of the largest cocoa producers in Asia, PT. OC operates in a highly competitive market, where supply chain efficiency is essential to maintaining the company's competitive edge. With its expertise in cocoa processing in both local and international markets, the company is committed to quality and sustainability, both in products and processes. Implementing KBPMS in PT. OC's supply chain management is expected to provide advantages in enhancing efficiency, reducing risks, and improving the company's performance, ultimately creating added value for the company and its customers.

Business Issue, in the modern business world, supply chain management plays a effective production planning and supply chain management are crucial for manufacturing firms like PT. OC. The company faces challenges such as raw material shortages due to weather, production disruptions from machine downtime, inventory overstock caused by order changes, and global logistics risks like international conflicts. These issues hinder performance metrics like On Time In Full (OTIF) and overall efficiency. The absence of a Performance Management System (PMS) exacerbates these challenges by limiting the company's ability to monitor productivity, resolve inefficiencies, and align goals. Implementing a PMS with tailored KPIs for procurement, production, inventory, and logistics can enhance real-time monitoring, optimize decision-making, and mitigate risks, ultimately improving supply chain performance.

Literature Review

Performance Management System

A performance management system is defined as a method to ensure alignment between individuals and organizational objectives (Magqadiyane, 2016). According to Dewo (2023), to measure and evaluate a company's progress in achieving its goals, the performance management system is essential in providing a structured approach to set, track, and assess key performance indicators (KPIs). Therefore, performance management is a crucial process in every organization, helping to identify objectives for employees that can support the organization in becoming a strategic player in a competitive market. This is achieved by ensuring a series of activities are adopted to maximize output and enhance company performance (Santhosh, 2021).

Some frameworks commonly used in organizations include the Balanced Scorecard (BSC) by Harvard, the Performance Prism by Cambridge, the Malcolm Baldrige National Quality Award (MBNQA) by the U.S. Congress, and the Knowledge-Based Performance Management System (KBPMS) by Dermawan Wibisono.

Knowledge-Based Performance Management System (KBPMS)

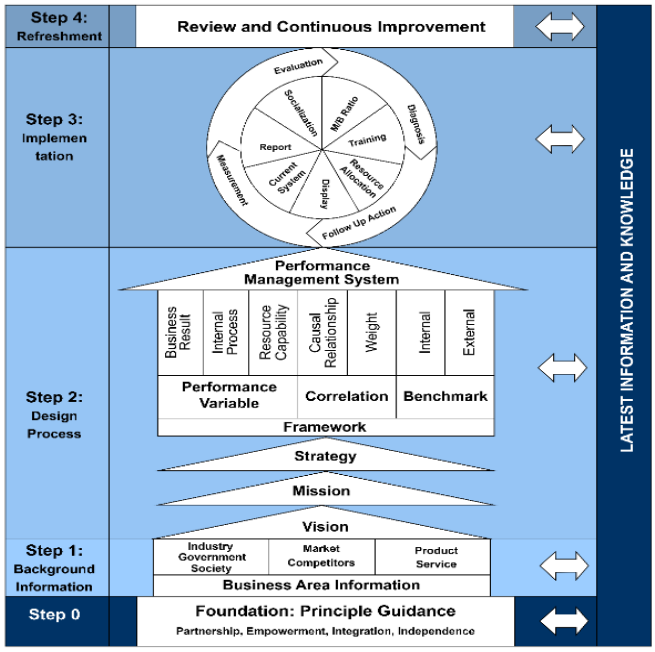


Fig 1. KBPMS Framework
Source: Wibisono (2016)

According to Wibisono (2016), designing a Knowledge- Based Performance (KBPMS) framework is divided into four stages as shown in Fig 1, encompassing:

Step 0: Foundation

Understanding the guiding principles that must be used as a foundation for designing PMS that carries an understanding of various existing PMS approaches, the essence of PMS, and the contextuality of PMS.

Step 1: Basic Information

Basic information is obtained from the business environment object itself. There are three major sets of information that need to be considered which include:

1. Company environment information,
2. Financial and market information,
3. Product or service information.

Since information about products and services is at the core of a company's competitive advantage, having accurate and detailed knowledge about this aspect becomes very important. This aspect essentially becomes the value that customers feel every time they interact or make a transaction because the quality of this information affects their perception and satisfaction with the products and services provided.

Step 2: Design Process

At the core of Performance Management, there are a number of key pieces of information that need to be addressed to ensure that every part of the organization is moving toward the same goals. These include the company's strategic statements such as vision, mission, strategies, and objectives; the performance variables that are the benchmarks for success; the relationships between these variables; the weight or level of importance of each variable to the company's overall performance; and the expected performance standards. In general, performance variables in a PMS can be grouped into three groups of performance variables that correspond to managerial responsibilities: (1) Business Results; (2) Internal Processes; and (3) Resource Capabilities

Step 3: Implementation

Several aspects need to be considered to achieve a successful implementation, including:

1. Tailoring a PMS with the specific needs of the company and accommodate the current PMS system.
2. Establishing a clear, concise, and relatable report with new PMS based on their organization levels.
3. Designing socialization that accordance with the needs of each different organizational level to be understood and accepted well.

4. 4. Analysing cost and benefit ratio to determine the significance of the newly designed PMS.
5. Providing training for the new PMS to understand the concept and to learn how to use different tools within the PMS.
6. Placing the right resources in charge of each performance variable for assessing, evaluating, diagnosing, and making a decision towards fault or deviation.

Step 4: Refreshment

At this stage, a review and continuous implementation of the PMS that has been designed is carried out to be in line with the company's vision, mission, and strategy.

METHOD

Conceptual Framework, the KBPMS framework will serve as the foundation for this study, providing a systematic approach to addressing supply chain challenges and improving performance. The detailed steps involved in the framework are illustrated in Figure 1.

Data Collection and Analysis Method, this research employs both primary and secondary data collection techniques to ensure accurate and comprehensive analysis. Primary data is gathered through interviews with key internal stakeholders at PT. OC, selected based on their direct involvement in the supply chain process. Secondary data involves analyzing the company's historical records, including profiles, performance reports, and other relevant supply chain data. External analysis is conducted using PESTLE and Porter's Five Forces frameworks, while internal analysis utilizes SWOT analysis. Additionally, the Analytical Hierarchy Process (AHP) is applied to determine the weighting of each performance variable and indicator.

RESULTS AND DISCUSSION

Stage 0: Foundation

The foundation stage focuses on establishing the guiding principles and important rules that form the basis for designing an effective Knowledge-Based Performance Management System (KBPMS) framework tailored to the needs of PT. OC. This stage ensures the system is aligned with the organization's values, operational objectives, and global practices. There are four foundation principles, including:

1. Partnership

Collaboration among key stakeholders including management, employees, suppliers, and customers, is crucial to ensure the implementation of a Knowledge-Based Performance Management System (KBPMS). This principle emphasizes fostering partnership and encouraging all parties to commit and support cultural and operational changes, particularly in the supply chain at PT. OC.

2. Empowerment

Leadership at all levels should focus on empowering employees in order to improve organizational performance. By aligning employee efforts with the KBPMS framework, PT. OC can strengthen its workforce's ability to respond to challenges and meet performance targets, ultimately enhancing supply chain resilience.

3. Integrated Performance Improvement

The KBPMS framework will connect variables across departments, fostering a unified approach to improvement and ensuring alignment between departmental and organizational goals.

4. Independent

A dedicated cross-functional team should be tasked with designing and implementing the KBPMS for PT. OC. This team must have the autonomy to make decisions, organize collaboration across departments, and define variables that reflect the specific needs of the supply chain while aligning with company objectives.

Stage 1: Basic Information

External Analysis

To understand the external factors influencing PT. OC's operations and strategic decisions, a thorough analysis of the business environment is essential. These external factors are crucial in identifying potential opportunities and risks that could impact on the company's performance in the market. The summary of PESTLE and of OC can be seen below.

Table 1. PESTLE Analysis

	PESTLE
Political	The cocoa industry in Indonesia is heavily influenced by government regulations on agricultural practices, trade policies, and labor laws. PT. OC must comply with these regulations to maintain operational stability. Trade policies, including tariffs and agreements with cocoa
Economic	Exchange rate fluctuations affect export profits, requiring effective foreign exchange risk management. Additionally, high inflation rates and reduced purchasing power could increase costs and affect demand for cocoa products. Global cocoa price trends also have a significant impact, with opportunities
Social	Socially, the increasing of consumer demand for sustainable products pushes companies like PT. OC to prioritize transparency, fair trade practices, and social responsibility.
Technological	Advancements such as process automation can improve efficiency, traceability, and

	customer engagement. Innovations in sustainability, including renewable energy and waste reduction technologies, align with environmental goals, while digital tools for supply chain management and customer engagement offer competitive advantages.
Legal	The cocoa industry in Indonesia is governed by a range of laws and regulations that affect production, trade, and labor practices. Compliance with local and international regulations, such as food safety standards, is critical to maintaining market access and avoiding legal penalties.
Environmental	Climate change impacts cocoa production, making it essential for PT. OC to adopt climate resilient farming practices. Additionally, sustainable sourcing that avoids deforestation and ensures effective waste management is crucial for maintaining environmental compliance and supporting a circular economy.

Porter's Five Forces is a business analysis model developed by Michael Porter in 1979. It helps businesses understand the competitive forces within an industry. The following table summarizes the key findings of the Five Forces analysis:

Table 2. Forces Analysis

PESTLE	
Threat of New Entrants (Moderate)	The requirement of significant investment for processing facilities, logistics, and certifications necessary to compete in a global market. An existing company, like PT. OC, has an advantage over established supplier and customer relationships, creating natural barriers for new players. However, smaller entrants that focus on organic or specialty cacao products could penetrate the specific market by leveraging those opportunities.
Bargaining Power of Suppliers (Low)	PT. OC operates its own cocoa plantations, reducing reliance on external suppliers for raw materials. This vertical integration strengthens its position by ensuring a stable and consistent supply chain while minimizing external supplier influence.
Bargaining Power of Buyers (High)	The availability of alternatives and the influence of large buyers such as food and chocolate manufacturers. These buyers demand competitive pricing, consistent quality of the product, and sustainability certifications.
The Threat of Substitutes (Low)	The threat of substitute products in the cocoa industry is low because there are no direct products as an alternative to cocoa products like cocoa powder, cocoa butter, or cocoa liquor, which are essential in food and beverage production.
Rivalry in the Industry (High)	The price competition, innovation of sustainable practices, and customer demands for quality are driving the competition. PT. OC should focus on providing premium-quality products and sustainability while maintaining strong customer relationships to remain competitive in this dynamic landscape.

InternalAnalysis

SWOT analysis is a strategic planning tools used to evaluate a company's internal strengths and weaknesses, as well as external opportunities and threats. The summary of SWOT analysis can be seen below.

Table 3. SWOT Analysis

Strength	**Weakness**
• PT. OC operates in multiple countries, providing diversified market reach and dependency in one region. • Integrated supply chain by focusing on all aspect from sourcing cocoa beans to financial product (ensure quality control and cost efficiency) • Long-term partneships with cocoa farmers, ensuring a steady supply good quality beans	• The company's revenue depending to fluctuations in cocoa prices • While quality of the product is emphasized, competition in the cocoa industry revolves around price • Supply may be disrupted due to dependence on agricultural raw materials which exposes companies to the impacts of climate change
Opportunities	**Threat**
• Partnering with food and beverage companies or chocolate manufacturer can strengthen its reputation and market share • Developing value-added products like specialty cocoa powder, butter, and liquor or health-oriented product	• Weather condition threaten the stability of the supply • Trade restrictions, tariffs, or political instability could disrupt operations.

Stage 2: Design Process

The second stage in creating a knowledge-based performance management system (KBPMS) is the design process. This stage includes an analysis of the company's vision, mission, and strategy to ensure the alignment of the system to be built with organizational goals. Then, the framework will be designed by determining several main elements, namely performance variables(business results, internal processes, resource capability), correlation (causal relationship and weight), and benchmarks (internal and external).

Vision

The vision of PT. OC is clear, concise, inspiring, and focused on specific aspects such as food quality and health. The vision can be measured by product quality improvements or health focused innovations. The vision is adaptable to changing trends, especially in the food industry, and is memorable. The vision is realistic and achievable, given the company's focus on sustainability and available resources. PT. OC's vision statement is generally well-crafted and provides clear direction for employees. Its adaptability, clarity, and focus on health and food quality create a strong foundation to guide the company's long-term strategy and performance.

Mission

PT. OC mission It effectively differentiates the company from its competitors by focusing on health, sustainability, traceability, and innovation. It highlights key strengths, such as an integrated value chain, that supports its goal of producing high-quality, traceable, and sustainable products.

Additionally, the emphasis on continuous improvement and tracking metrics provides clear direction and encourages better decision-making for the future. The mission is easy for employees to understand and motivates them by focusing on providing high-quality products while promoting transparency. However, the mission could be shortened to facilitate communication, and there is room for improvement in ensuring its regular reviews remain relevant to changing market conditions.

Corporate Strategy

Corporate strategy is usually related to one principle with other principles in general to achieve the company's mission and how the company chooses a specific path to achieve this mission. To create a Knowledge-Based Performance Management System (KBPMS), all the corporate strategies will be divided into three categories namely, resource capabilities, internal processes, and business result. The strategy map for PT. OC is illustrated below.

Perspective	**Aspect**	Variable	KPI
Business Result	Financial	Logistic cost management	Shipping cost
		Storage efficiency	Inventory holding cost
	Non-Financial	Employee satisfaction	Employee satisfaction index
		Customer satisfaction	Delivery satisfaction
		Sustainability	Percentage of recycled materials used
			Waste reductions rate
Internal Process	Innovation	Innovation investment	Percentage of budget for supply chain R&D
		Process optimization	Number of new process improvement
		Product quality diversification	Number of new grade quality of products
	Operation Process	Operational excellent	Delivery on time in full
			Order accuracy rate
			Defect rate in raw materials
	After Sales	Customers	Customer
	Service	Complaint resolution	Resolution time
Resource Capability	Human Resources	Employee	Employee engagement index
	Technology Resource	IT reliability	System downtime
	Organizational Resources	Collaboration efficiency	Supply chain collaboration index

Figure 2. Strategy Map, Relationship Among Variables

According to Wibisono (2016), the relationship among variables is essential to facilitate the process of improving underperforming indicators that do not meet standards. Analyzing the relationships between performance indicators helps to determine which indicators influence others, providing valuable insights for decision-making when creating improvement strategies. Due to data availability and time constraints, this study focuses specifically on vertical relationships, which are assessed using the Analytical Hierarchy Process (AHP).

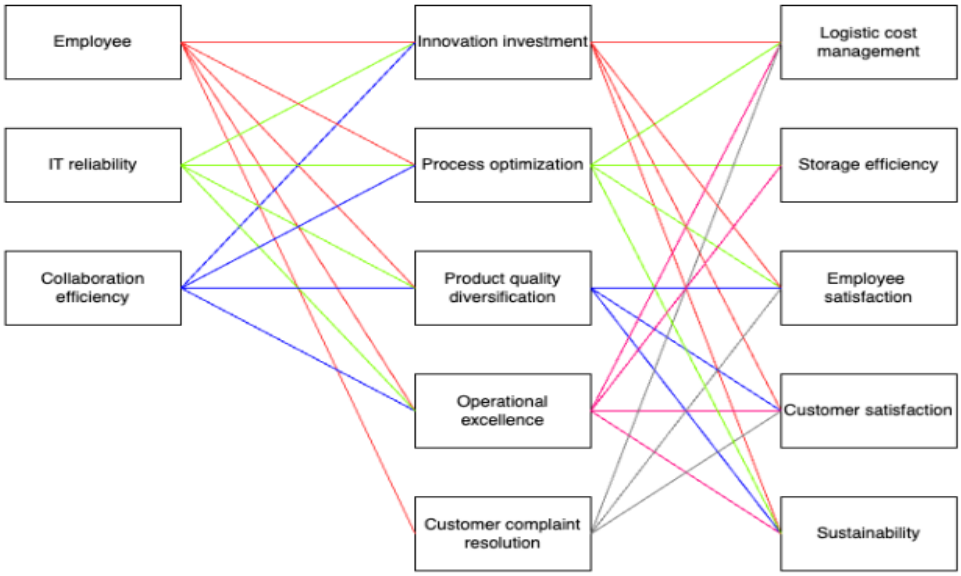


Figure 3. Relationship Among Variables

The outcomes of the Performance Indicator Weighting can be found in Figure 4.

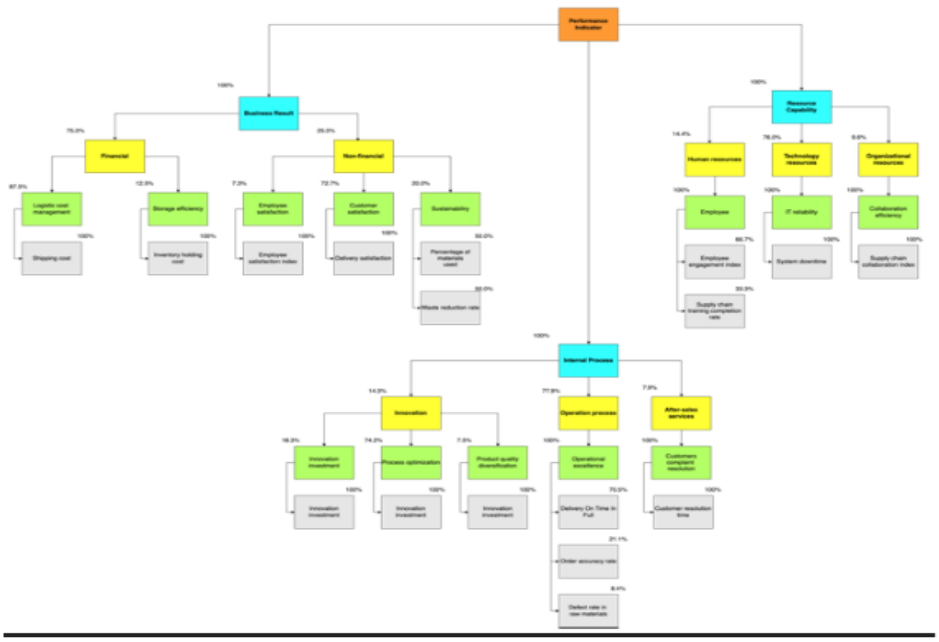


Figure 4. Indicator Weighting

Benchmarking

Benchmarking is a key practice used to compare an organization's performance against industry standards, best practices, or internal benchmarks to identify areas for improvement and drive operational excellence. The table 4 shows the results of benchmarking analysis for each performance indicator.

Table 5. Benchmarking Performance Indicator

KPI	Benchmark	Target
Shipping cost	100% (Internal Benchmark)	100% on budget
Inventory holding cost	100% (Internal Benchmark)	100% on budget
Employee satisfaction index	Employee Satisfaction Index: 80-100: Very high satisfaction 70-79: High satisfaction 60-69 : Acceptable satisfaction 50-60 : Low satisfaction 0-50 : Very low satisfaction (Get Ahead by LinkedIn News, 2022)	90%
Delivery satisfaction	CSAT : Food Manufacturing: 81% (ACSI, 2024)	90%
Percentage of material used	100% (Internal Benchmark)	100%
Waste reductions rate	5% released to the environment	0%
Percentage of budget for supply chain R&D	100% (Internal Benchmark)	100% on budget
Number of new process improvements	N/A	5-10 strategic initiatives annually
Number of new grade quality of products	N/A	1 product/year
Delivery On Time In Full	100% (Internal Benchmark)	100%
Time In Full	100% (Internal Benchmark)	100%
Defect rate in raw materials	Raw cocoa beans: Moldy beans: not more than 4% (FDA, 2018) Slaty beans: not more than 3% Defective beans: not more than 5% (Cocoa Bean, 2020)	<5%
Customer resolution time	24 Hours (Internal Benchmark)	24 Hours
Employee engagement index	Best Practice: 70% (Gallup, 2023)	90%
Supply chain training completion rate	N/A	100%
System downtime	Offer 24/7 availability of critical services (Barry Callebaut)	Less than 1% from operational hours
Supply chain collaboration index	N/A	80%

Stage 3: Implementation

This stage ensures that the proposed system is effectively applied within the organization and evaluated over time. Key supporting tools for implementing performance management include understanding the current system, creating relevant reports, conducting socialization programs, performing a cost-benefit ratio analysis, providing training, and ensuring resource allocation.

Additionally, there are four main pillars in the implementation of the Knowledge-Based Performance Management System (KBPMS) encompassing measurement, evaluation, diagnosis, and follow-up action.

The implementation plan of the KBPMS (Knowledge-Based PerformanceManagement System) will require approximately three months for completion and Table 6 shows the detailed plan outlining the key activities, responsible parties, target audiences, duration of activities, and tools required for successful execution:

Table 6. Implementation Plan

Activities	PIC	Target Audience	Duration
Preparation Process	PMS PIC (Supply Chain Manager)	-	5
Leadership and communication training	Leadership Trainers	Middle management	3
Presentation on findings of basic information (external and internal analysis)	PMS PIC (Supply Chain Manager)	Middle management	1
Vision, mission, strategy awareness program	PMS PIC (Supply Chain Manager)	Middle management	1
General introduction and overview on performance management system	PMS PIC (Supply Chain Manager)	Middle management	1
Presentation on performance management framework (indicators, measures, target, benchmark	) PMS PIC (Director)	Middle management	1
Training of PMS to head of each division in supply chain (indicators, measures, record keeping, reporting format)	PMS PIC (Director)	Head of each division	5
Strategic planning in response to the new PMS for each division	PMS PIC (Director)	Head of each division	15
Vision, mission, strategy awareness program	: Head of each division	All Employees	5
Employee level			
General introduction and	Head of each division	All Employees	5

overview on performance management system: employee level			
Implementation Trial Phase	Head of each division	Departments in supply chain scope	20
Evaluation, diagnosis and follow up action plan	PMS PIC (Director)	Middle management	Continuous process

Stage 4: Refreshment

The final stage in creating the KBPMS (Knowledge-Based Performance Management System) framework is the refreshment phase. This stage involves reviewing, updating, and refining the performance management system to ensure it remains aligned with the company's evolving needs. A successful performance management system should be flexible and dynamic, adapting to changing business goals. The primary purpose of such a system is to maintain the company's competitiveness in the market, ensuring it can continuously meet its objectives and stay ahead of the competition.

CONCLUSION

The findings of this study underline the critical role of performance management in addressing inefficiencies at OC. Key issues such as procurement inefficiencies, production delays, inventory management challenges, and logistics performance are impacted by the lack of a formal system to measure and manage performance. Without clear performance indicators, it becomes difficult to measure, monitor, and optimize key areas that impact the company's ability to meet its strategic goals.

Implementing a KBPMS framework will enable OC to address inefficiencies in the OC supply chain by providing a structured approach to performance management, real-time KPI tracking, and aligning operational activities with the company's strategic objectives. In addition, focusing on employee engagement, sustainability, and resource optimization will further support operational excellence, contributing to long-term business success. Furthermore, OC should implement the KBPMS framework by utilizing the Key Performance Indicators (KPIs) as the foundation for addressing inefficiencies in procurement, production, inventory management, and logistics. To ensure the sustainability and effectiveness of the KBPMS framework, OC should periodically review and refine these KPIs in line with the company's strategic objectives and evolving market conditions. The "refreshment" phase of the KBPMS framework should be implemented, where performance

metrics are updated, and processes are streamlined to maintain alignment with long-term business goals.

REFERENCES

Alexy, O. (2022). How flat can it get? From better at flatter to the promise of the decentralized, boundaryless organization. *Journal of Organization Design*, *11*(1), 31-36. https://doi.org/10.1007/s41469-022-00110-0

Arif, M. R., Ishak, A. A. A., Tamrin, T., & Jayadi, M. (2024). Exploring control environment practices in local government-owned companies. *EKUITAS (Jurnal Ekonomi dan Keuangan)*, *8*(3), 418-433.

Baird, K., Su, S., & Munir, R. (2019). Levers of control, management innovation and organisational performance. *Pacific Accounting Review*, *31*(3), 358-375. https://doi.org/10.1108/PAR-03-2018-0027

Castelo, S. L., & Gomes, C. F. (2024). The role of performance measurement and management systems in changing public organizations: An exploratory study. *Public Money & Management*, *44*(5), 399-406. https://doi.org/10.1080/09540962.2023.2204400

Choiri, C., Khasanah, U., Zainab, Z., & Al'Asqolaini, M. Z. (2023). Application of management control systems and leadership style on managerial performance. *International Journal of Applied Finance and Business Studies*, *11*(3), 680-687.

Chowdhury, A., & Shil, N. C. (2020). Conceptualising Management Control Systems: illustrative evidence from literature on the Australian business sector. *Vezetéstudomány/Budapest Management Review*, *51*(11), 51-63. https://doi.org/10.14267/VEZTUD.2020.11.05

Curtis, E., Lillis, A. M., & Sweeney, B. (2017). Simons' levers of control framework: commensuration within and of the framework. In *Advances in Management Accounting* (pp. 87-121). Emerald Publishing Limited. https://doi.org/10.1108/S1474-787120170000028004

El Farabi, M. N. (2021). Ketidakpastian Lingkungan Organisasi Berimplikasi Terhadap Pemilihan Sistem Pengendalian Manajemen. *JABE (Journal of Applied Business and Economic)*, *7*(2), 225-238. http://dx.doi.org/10.30998/jabe.v7i2.7729

Einhorn, S., Fietz, B., Guenther, T. W., & Guenther, E. (2024). The relationship of organizational culture with management control systems and environmental management control systems. *Review of Managerial Science*, *18*(8), 2321-2371. https://doi.org/10.1007/s11846-023-00687-0

Ernawati, E. (2005). Pengaruh Strategi Bisnis dan Ketidakpastian Lingkungan terhadap Hubungan antara Informasi Broad Scope Sistem Akuntansi Manajemen dan Kinerja Manajerial. *Journal of Accounting and Investment*, *6*(1), 21-39.

Farras, M. F., Hadian, D., & Hardiyana, A. (2024). The Influence of Transformational Leadership and Organizational Culture on Employee Performance: Study of One The Companies Operating in The Field of Publishing and Book Trading in The City of Bandung. *Acman: Accounting and Management Journal*, *4*(1), 20-28. https://doi.org/10.55208/aj.v4i1.128

Hartmann, F., Kraus, K., Nilsson, G., Anthony, R., & Govindarajan, V. (2020). *EBOOK: Management Control Systems, 2e*. McGraw Hill.

Hermawan, M., & Putri, J. T. (2018). Can Management Control Systems be applied in SME? A case study of small manufacturing in Indonesia. *The Indonesian Journal of Accounting Research*, *21*(2). http://doi.org/10.33312/ijar.359

Jukka, T. (2023). Does business strategy and management control system fit determine performance?. *International Journal of Productivity and Performance Management*, *72*(3), 659-678. https://doi.org/10.1108/IJPPM-11-2020-0584

Krishnan, C. S. N., Ganesh, L. S., & Rajendran, C. (2022). Management accounting tools for failure prevention and risk management in the context of Indian innovative start-ups: a contingency theory approach. *Journal of Indian Business Research*, *14*(1), 23-48. https://doi.org/10.1108/JIBR-02-2021-0060

Ludji, T. R. (2025). Contingency relationship between perceived environmental uncertainty and management control systems: Implications for innovation and performance. *Journal of Accounting & Organizational Change*, 1-24. https://doi.org/10.1108/JAOC-10-2024-0322

Minkov, M., & Kaasa, A. (2021). A test of Hofstede's model of culture following his own approach. *Cross Cultural & Strategic Management*, *28*(2), 384-406. https://doi.org/10.1108/CCSM-05-2020-0120

Möller, K., Schäffer, U., & Verbeeten, F. (2020). Digitalization in management accounting and control: an editorial. *Journal of management control*, *31*(1), 1-8. https://doi.org/10.1007/s00187-020-00300-5

Osma, B. G., Gomez-Conde, J., & Lopez-Valeiras, E. (2022). Management control systems and real earnings management: Effects on firm performance. *Management accounting research*, *55*, 100781. https://doi.org/10.1016/j.mar.2021.100781

Phan, T., Baird, K., Bhuyan, M., & Tung, A. (2023). The associations between management control systems, organisational capabilities and performance. *Journal of Management Control*, *34*(4), 435-462. https://doi.org/10.1007/s00187-024-00365-6

Presti, C. (2021). Toward a Contemporary Concept of Management Control. In *Integrating Performance and Risk in a Management Control System: A Framework to Understand Aspects and Directions of Integration* (pp. 9-41). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-87082-9_2

Sarkhani Ganji, H. R., Najafi-Moghadam, A., & Sarraf, F. (2022). The impact of management accounting systems on development of intellectual capital dimensions by emphasis on business intelligence in Iran capital market. *International Journal of Finance & Managerial Accounting*, *7*(26), 133-143. https://doi.org/10.30495/ijfma.2022.59710.1609

Sinha, V. K., Derichs, D., & Malmi, T. (2024). Internet-based technologies, accounting processes, and management control systems. In *Research Handbook on Accounting and Information Systems* (pp. 265-287). Edward Elgar Publishing. https://doi.org/10.4337/9781802200621.00028

Speklé, R. F., & Verbeeten, F. H. (2014). The use of performance measurement systems in the public sector: Effects on performance. Management accounting research, 25(2), 131-146. https://doi.org/10.1016/j.mar.2013.07.004

Tyasari, I., Arshad, I., & Setiyowati, S. W. (2024). Management control systems package, corporate governance, and SME's performance in the context of Malaysia. *BISMA (Bisnis dan Manajemen)*, 261-296. https://doi.org/10.26740/bisma.v16n2.p261-296

Wahyudi, I., Alim, M. N., Malia, E., & Dewi, I. O. (2021). Budaya organisasi dan sistem pengendalian manajemen pada perguruan tinggi. *Kabillah: Journal of Social Community*, *6*(2), 126-140. https://doi.org/10.35127/kabillah.v6i2.146

Woods, M. (2009). A contingency theory perspective on the risk management control system within Birmingham City Council. *Management Accounting Research, 20*(1), 69-81. https://doi.org/10.1016/j.mar.2008.10.003

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