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DESIGN OF SUPPLY CHAIN PERFORMANCE USING ANP METHOD WITH BALANCED SCORECARD APPROACH

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Abstract

Efficient supply chain performance is a critical factor for a company's success. This research aims to design a supply chain management (SCM) performance evaluation system using the Balanced Scorecard (BSC) approach as a basis for determining Key Performance Indicators (KPIs) at CV Jumjum Station. The research method employed is descriptive quantitative, with primary data collected through interviews, pairwise comparison questionnaires, and secondary data from literature studies. Data analysis is conducted using the Analytic Network Process (ANP) using Super Decision 3.20 to measure the level of importance among hierarchies and BSC perspectives. The results indicate that the financial aspect is the top priority in evaluating SCM performance, followed by employee development, customer service, and the company's internal processes. Delivery reliability, product development, and productivity ratios are identified as key areas that need improvement to optimize the company's SCM performance.

Keywords: Analytic Network Process, Balanced Scorecard, KPI, Performance Evaluation, Supply Chain Management, Super Decision

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INTRODUCTION

The food and beverage (F&B) industry exemplifies the vital role of SCM in a sector marked by rapid growth and dynamic market conditions. As a necessity, the food and beverage industry has undergone massive expansion both domestically and globally. In 2018, the revenue of the F&B segment in the Asia-Pacific region reached USD 44,176 million, reflecting the significant economic contribution of this sector (Anisah Salsabila Nasution et al., 2022). In Indonesia, the food and beverage sector has demonstrated remarkable growth, with an average annual growth rate of 8.16% from 2015 to 2019, further driven by population increases and changes in consumer behavior (Dewi, 2022). This growth underscores the importance of robust SCM practices to support the industry's continued expansion and competitiveness.

The food and beverage industry in Pare, East Java, particularly highlights the potential of this sector. Pare's strategic location facilitates market expansion, becoming an attractive new business hub and contributing to the growth of F&B companies. According to data from the Pare Central Bureau of Statistics (BPS Kabupaten Kediri), the number of food and beverage stalls in Pare has increased, with 470 food and beverage stalls in Tulungrejo Village alone, indicating high demand and entrepreneurial activity among the community (Badan Pusat Statistik Kabupaten Kediri, 2021). However, as the industry grows, competition becomes increasingly intense, necessitating effective SCM practices to maintain market presence and competitiveness (Warella et al., 2021).

One company that has managed to navigate these challenges is CV Jumjum Station, an F&B company established in 2018. CV Jumjum Station initially experienced rapid growth, expanding its operations to nine outlets across Kediri. Although successful in the early stages, the company faced significant challenges that led to the closure of several outlets in 2022, leaving only five operating outlets (Badan Pusat Statistik Kabupaten Kediri, 2021). The company's SCM practices lacked standardization, with performance evaluations based solely on financial metrics. This narrow focus hindered a comprehensive assessment of operational effectiveness, contributing to the company's inability to sustain its growth cycle (Martono dalam Auritz & Rachmarwi, 2020).

Based on the data on supply reception from suppliers, it shows that there were challenges/constraints during the months of January-December 2022:

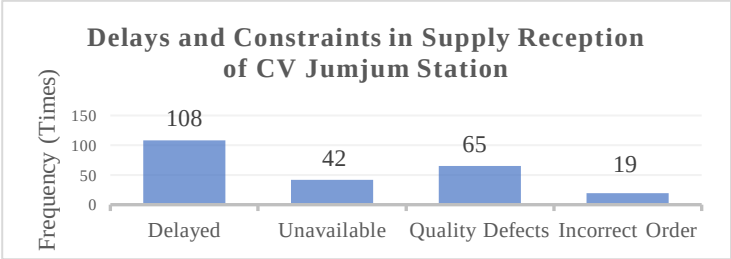

Figure 1. Data on Delays and Constraints in Supply Reception of CV Jumjum Station

Source: Supply Reception Data for Company CV Jumjum Station, January - December 2022

Additionally, CV Jumjum Station's inventory management practices presented further challenges. The absence of a safety stock policy and a reactive procurement approach, where raw materials were only ordered when stocks were low, disrupted the supply chain. Data from 2022 showed ongoing issues such as delays, stock-outs, and quality discrepancies, impacting the company's ability to meet customer needs and maintain consistent service levels (Handayani & Rabihah, 2022). These challenges highlight the need for stronger and more proactive SCM practices to improve operational efficiency and competitiveness.

To address challenges, CV Jumjum Station needs a comprehensive SCM performance evaluation framework. This research aims to design such a framework integrating financial and non-financial metrics for a holistic view of SCM performance. Much of the research in SCM has primarily focused on large companies, with limited studies addressing the specific challenges faced by SMEs in the food and beverage sector (Hamdan Amaruddin, 2021). This study fills this gap by applying SCM principles to a medium-sized company like CV Jumjum Station. By demonstrating how comprehensive SCM practices can enhance operational efficiency and competitive positioning, this research contributes to the broader literature on SCM in SMEs. Furthermore, the integration of BSC and ANP represents a novel approach to SCM performance evaluation, providing a broader analysis to comprehend the complexities of supply chain dynamics (Saleheen & Habib, 2022).

The intense competition in the food and beverage sector necessitates robust SCM practices for companies like CV Jumjum Station. Effective SCM can improve operational efficiency, reduce costs, and enhance customer satisfaction. This research develops a comprehensive SCM performance evaluation framework integrating financial and non-financial metrics through the Balanced Scorecard (BSC) and Analytical Network Process (ANP) approaches. By addressing gaps in CV Jumjum Station's SCM practices, it provides actionable insights to help the company achieve long-term sustainability and competitive advantage (Martono dalam Auritz & Rachmarwi, 2020). The dynamic food and beverage industry highlights the importance of effective SCM practices (Kimberly

Febrina Kodrat et al., 2019). This research applies SCM principles to a medium-sized company like CV Jumjum Station, showing how comprehensive practices can enhance operational efficiency and competitiveness. It intro duces a novel approach by integrating BSC with ANP for SCM performance evaluation. This integration provides a multidimensional analysis considering relationships among performance metrics, offering a more accurate and practical framework. Employing this framework enables CV Jumjum Station to improve operational efficiency, enhance supply chain performance, and achieve sustainable growth in a competitive market (Sendara et al., 2019).

LITERATURE STUDY

Supply Chain Management and Performance Measurement

In today's contemporary business landscape, Supply Chain Management (SCM) plays a crucial role in streamlining operations, enhancing efficiency, and securing competitive advantages. SCM encompasses the planning, coordination, and execution of activities involved in the production and delivery of goods and services (Madhani, 2019). Effective SCM ensures that products are available at the right place and time, aligning supply with consumer demand without causing excess inventory or stock-outs (Yu et al., 2019). As companies navigate the increasingly complex challenges of globalization, technological advancements, and changing consumer preferences, SCM becomes increasingly important for sustaining business success.

The primary objective of SCM is to optimize the overall value generated by the supply chain network, from suppliers to end consumers (Wu et al., 2018). This value maximization is achieved through an integrated approach that encompasses procurement, production, and distribution processes, ultimately resulting in cost reductions, improved service levels, and customer satisfaction. In recent years, research has shown that integrating SCM practices with human resource management (HRM) can significantly influence a company's performance. A study involving 435 respondents working in SCM or related operational roles in Small and Medium Enterprises (SMEs) demonstrated that the interaction between human resources and competitive elements such as quality, agility, and cost management not only had a significant but also a substantial impact, potentially transforming existing paradigms (Muhammad Yusuf et al., 2022). The synergy between HRM and SCM leads to harmonious resource alignment, reinforcing organizational performance and enhancing efficiency and competitiveness.

Balanced Scorecard and Analytic Network Process (ANP) in Supply Chain Management

The Balanced Scorecard (BSC) approach balances financial measures with operational metrics across customer satisfaction, internal processes, learning and growth (Farikhatul Ilmiah et al., 2023). Utilizing BSC allows companies to align SCM strategies with overall objectives, ensuring sustainability and competitive advantage. The BSC approach has gained popularity due to its ability to provide a comprehensive assessment of organizational performance (Kaplan & Norton, 2000). Unlike traditional financial metrics that solely focus on past financial outcomes, the BSC integrates forward-looking indicators that reflect the customer perspective, internal business processes, and the organization's capacity for learning and growth (Laurentia et al., 2019).

This multidimensional approach enables companies to identify areas for improvement, align operational activities with strategic goals, and foster a culture of continuous performance improvement. In the context of SCM, the BSC framework can be highly useful for evaluating and enhancing supply chain performance (Indrajit & Djokopranoto, 2006). It allows companies to monitor and optimize key performance indicators (KPIs) within their supply chain networks, from supplier performance and inventory management to distribution efficiency and customer satisfaction (Permata, 2019). By integrating these metrics into a unified evaluation framework, companies can gain a comprehensive understanding of their SCM capabilities and identify opportunities for improvement.

In addition to the BSC, this research incorporates the Analytical Network Process (ANP) to further refine the SCM performance evaluation framework. The ANP methodology, developed by Thomas L. Saaty, goes beyond traditional Analytical Hierarchy Process (AHP) by considering interdependencies among various performance metrics (Saaty (1999) in Maciej Serda et al., 2019). This allows for a more comprehensive analysis of SCM performance, capturing the complex relationships and feedback loops that influence supply chain outcomes. The integration of BSC and ANP provides a robust and multidimensional framework for evaluating SCM performance, offering insights that can inform strategic decision-making and operational improvements (Maciej Serda et al., 2019).

RESEARCH METHODOLOGY

The research method used in this journal is a quantitative descriptive approach. The research is specified to identify patterns or relationships in data related to supply chain management performance at the research object, CV Jumjum Station. This type of research is descriptive, collecting quantitative data in the form of numbers to describe and analyze the studied phenomenon in order to provide an objective and systematic understanding. The approach methods used are observation and interviews to identify problems in the research object, as well as data collection through questionnaires and company internal data. Data collection techniques consist of primary data obtained through interviews and pair-wise comparison questionnaires, as well as secondary data from literature studies. The analysis method used is the Balanced Scorecard approach using Analytic Network Process as a tool

to measure the level of importance between hierarchies or networks, as well as matrix calculations with Super Decision 3.20 software and Microsoft Excel for quantitative assessment of supply chain performance.

RESULT AND DISCUSSION

This research aims to identify relevant and appropriate Supply Chain Management (SCM) performance indicators for CV Jumjum Station. It begins with a literature study to find the best frameworks and methods applicable to the company. The results are then developed into a questionnaire distributed to the company's internal parties (owner, operational supervisor, outlet captains) to evaluate the suitability of the identified SCM indicators from literature with the company's actual conditions.

The questionnaire gathers information to provide an overview of the identified SCM indicators' suitability with the real situation and assess the potential success of implementing SCM flow improvements. The research also compares the questionnaire results with successful cases of similar companies implementing certain SCM indicators for a broader perspective on the proposed changes' suitability and sustainability.

Through these stages, the research aims to contribute to the development of the SCM flow at CV Jumjum Station by identifying relevant indicators aligned with the company's needs and conditions. The questionnaire results indicate that all proposed indicators received approval or were considered relevant by the company's management, with the following results:

Table 1. First Questionnare Results for KPI Per Indicator

No	Perspective	KPI	Code
1	Finance (F)	Supplier Cost saving initiative	F1
		Rasio produktifitas	F2
2	Customer (C)	Delivery Lead Time	C1
		Delivery performance	C2
		Delivery reliability	C3
3	Internal process (IP)	Supplier lead time	IP1
		Supplier rejection rate	IP2
		Purchase order cycle time	IP3
		Total inventory cost	IP4
		Frequency of delivery	IP5
4	Learning & growth (LG)	Employee skill	LG1
		Pengembangan produk	LG2

Before determining the weight of each sub-aspect of the Key Performance Indicator (KPI) to measure supply chain performance at CV Jumjum Station, the initial step taken is to map the interrelationships between these sub-aspects by constructing a network matrix. The construction of this network matrix is an important stage that must be carried out to ensure that all sub-aspects to be assessed are interrelated and mutually support the achievement of the overall supply chain performance measurement objectives in the company.

Table 2. Relationship Between Sub-Aspects

		AFFECT											
		F1	F2	C1	C2	C3	IP1	IP2	IP3	IP4	IP5	LG1	LG2
BE EFFECTED	F1					✓		✓		✓	✓		
	F2	✓			✓	✓				✓	✓		✓
	C1							✓	✓		✓		
	C2			✓			✓		✓		✓	✓	
	C3			✓	✓		✓	✓			✓	✓	
	IP1							✓					
	IP2	✓											
	IP3			✓			✓						✓
	IP4	✓			✓		✓	✓					✓
	IP5	✓		✓	✓		✓	✓					✓
	LG1												✓
	LG2							✓	✓				

This network matrix is constructed based on the results of a literature study conducted by reviewing several relevant journals, and then aligned with the results of interviews conducted with parties from CV Jumjum Station who are the research objects. From the results of these interviews, it is obtained that the relationships between the sub-aspects of the supply chain KPI in this company are as shown in Table 3 above. This relationship

provides a visual representation of the interrelationships among the KPI sub-aspects, thereby enabling the determination of appropriate weights for each sub-aspect. Thus, this step helps ensure that the supply chain performance measurement at CV Jumjum Station is conducted comprehensively and in accordance with the company's needs.

The next process involves modeling the causal relationships between the KPI aspects and sub-aspects using the Super Decision 3.20 software. Here, each KPI aspect is represented as a 'Cluster' and each sub-aspect as a 'Node'. By inputting the causal relationship matrix into this software, a visualization of the network of interrelationships among aspects and sub-aspects is obtained in the form of a diagram. The results of implementing the network modeling of interrelationships among aspects and sub-aspects displayed in a network diagram using this software can be seen in Figure 1 below.

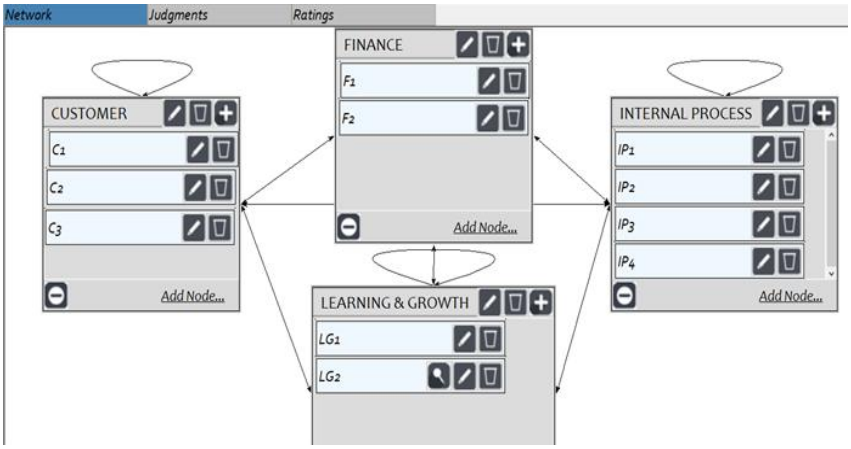

Figure 2. Network Matrix for Performance Evaluation of CV Jumjum Station

Based on the analysis of the interrelationships among sub-aspects visualized in the network diagram in Figure 1, the levels of causal relationships between each sub-aspect can be identified. The result of this input yields the following relationships:

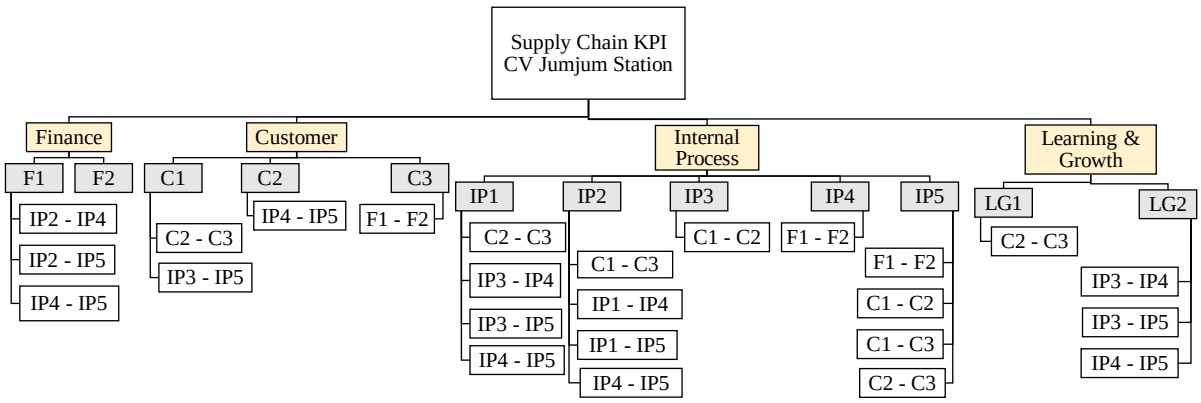

Figure 3. Interrelationship Diagram of KPIs for Weight Determination

In this study, an interrelationship diagram was employed to illustrate the complex connections between various aspects and sub-aspects of the Key Performance Indicators (KPIs). This diagram served as a crucial foundation for developing a comprehensive pairwise comparison questionnaire. The Analytic Network Process (ANP) method, implemented through the sophisticated Super Decision software, was utilized to quantify the intricate levels of dependence and feedback among the system's elements. This approach allows for a more nuanced and accurate determination of KPI weights, taking into account the multifaceted nature of supply chain performance.

The pairwise comparison questionnaire, a key tool in this research, was carefully distributed to three respondents who hold significant positions within the management structure of CV Jumjum Station. This selection ensured that the insights gathered were from individuals with deep understanding and experience in the company's operations. To synthesize the diverse opinions of these three respondents into a cohesive perspective, the geometric mean method was employed. This method is particularly effective in combining individual judgments in group decision-making processes.

The pairwise comparison values, covering both aspects and sub-aspects, were meticulously collected from all three respondents. These raw data were then processed using Microsoft Excel, a powerful tool for statistical analysis. The geometric means of these values were calculated, providing a balanced representation of the collective judgment. This approach ensures that the final KPI weights are not skewed by any single opinion but rather represent a consensus view from the management team.

The resulting KPI weights, derived through this rigorous process, embody the collective wisdom and strategic priorities of the company's leadership. These weights are presented in a comprehensive table, offering a clear and quantifiable basis for evaluating and prioritizing different aspects of supply chain performance. This method not only provides numerical weights but also captures the nuanced interrelationships between various performance indicators, offering a holistic view of the supply chain's dynamics.

Table 3. Geometric Mean Results of Processing Data from the Second Questionnaire for Aspect Section

Aspect	Comparison of Related Aspects	Respondent			Geomatrix Mean
		1	2	3	
F	F - IP	0,5	0,33	0,5	0,435
C	C - F	2	3	4	2,884
	C - IP	1	1	0,5	0,794
	F - IP	0,33	0,25	0,25	0,274
IP	C - F	2	1	2	1,587
	C - IP	1	1	1	1,000
	C - LG	3	2	1	1,817
	F - IP	0,25	0,5	0,5	0,397
	F - LG	0,5	0,5	0,5	0,500
	IP - LG	1	2	2	1,587
LG	C - F	2	3	2	2,289
	C - IP	0,5	0,5	0,33	0,435
	C - LG	2	2	1	1,587
	F - IP	0,25	0,33	1	0,435
	F - LG	1	0,5	0,33	0,548
	IP - LG	0,5	1	1	0,794

After obtaining the geometric mean (geomean) values for each supply chain Key Performance Indicator (KPI) aspect based on the pairwise comparison matrix, the next critical step in our research methodology was to input these values into specialized software. This step was essential for measuring the inconsistency level of the comparisons, a crucial aspect of validating the consistency and accuracy of our KPI aspect assessments.The calculation of inconsistency is a fundamental component in our analytical process. It serves as a key metric to ensure the logical coherence and reliability of the judgments made in the pairwise comparisons. In line with established practices in Analytic Network Process (ANP) research, we adhered to the standard that a comparison is considered consistent if the inconsistency ratio is less than 10%. This threshold is widely accepted in the field and provides a robust criterion for assessing the quality of our data.

In our analysis, any inconsistency value exceeding 10% was flagged as indicative of logical inconsistency, necessitating a thorough revision of the corresponding assessments. This rigorous approach ensures the integrity of our data and the validity of our subsequent analyses. The inconsistency value plays a pivotal role in determining whether the pairwise KPI aspect data can be statistically accepted as valid or if it requires reassessment.

This process of inconsistency checking is not merely a procedural step but a critical quality control measure in our research. It ensures that the weights and priorities derived from our ANP model are based on logically consistent judgments, thereby enhancing the reliability and applicability of our findings in the context of supply chain performance measurement.

The results of our input data, including the inconsistency ratios for each comparison, are presented in a comprehensive table below.

Table 4. Data Calculation Results of Inconsistency Values for KPI Aspects

Aspek KPI	Nilai Inkonsistensi
Finance	0.00
Customer	0.00
Internal Process	0,02300
Learning & Growth	0,07964

An inconsistency value below 10% indicates that the pairwise comparisons were conducted accurately and in a structured manner, without significant bias. Thus, the pairwise comparison data for the four KPI aspects has met the consistency threshold based on common ANP research practice. This data is statistically validated and can be used in the subsequent analysis stage to determine the weights of each sub-aspect in the Balanced Scorecard.

After the data is stated to be consistent, the next step will be to calculate the weight or relative priority of each Key Performance Indicator (KPI) in the supply chain. This research uses a quantitative approach based on a pair-wise comparison questionnaire instrument filled out by three respondents who are stakeholders of CV. Jumjum Station. The qualitative preference data from the questionnaire results is processed using the geometric mean calculation technique to produce quantitative weighting scores for each KPI, with the following results:

Table 5. Geometric Mean Results of Processing Data from the Second Questionnaire for BSC Aspects

Sub-aspect	Comparison of Related Sub-aspects	Respondent			Geomatrix
		1	2	3	
F1	IP2 - IP4	3	2	3	2,6207
	IP2 - IP5	1	3	2	1,8171
	IP4 -IP5	0,33	0,25	0,5	0,3455
C1	C2 -C3	2	2	3	2,2894
	IP3 - IP5	0,25	1	0,33	0,4353
C2	IP4 - IP5	0,33	1	1	0,6910
C3	F1 - F2	0,2	0,5	0,2	0,2714
IP1	C2 - C3	1	2	2	1,5874
	IP3 - IP4	4	3	1	2,2894
	IP3 - IP5	3	2	2	2,2894
	IP4 - IP5	0,25	0,5	1	0,5000
IP2	C1 - C3	0,5	0,33	0,5	0,4353
	IP1 - IP4	0,5	1	0,33	0,5485
	IP1 - IP5	2	2	2	2,0000
	IP4 - IP5	1	3	3	2,0801
IP3	C1 - C2	0,5	0,33	0,5	0,4353
IP4	F1 - F2	1	3	3	2,0801
IP5	F1 - F2	3	3	4	3,3019
	C1 - C2	0,5	0,33	0,5	0,4353
	C1 - C3	0,5	0,5	0,5	0,5000
	C2 - C3	2	3	5	3,1072
LG1	C2 - C3	4	5	3	3,9149
LG2	IP3 - IP4	0,5	0,33	0,25	0,3455
	IP3 - IP5	2	1	1	1,2599
	IP4 - IP5	3	5	3	3,5569

The geometric mean values of these sub-aspects are then entered into the Super Decisions 3.20 software judgement in the matrix section to automatically calculate the local weights of the supply chain KPIs using the ANP method. This is done to determine the values of each sub-aspect within each balanced scorecard aspect, which will become the company's supply chain KPIs. The calculation results are summarized in the table

Table 6. Local and Global Priority of the KPIs

KPI	Local Weight	Global Weight
F1	0,3306	0,0827
F2	0,6694	0,1674
C1	0,0664	0,0166
C2	0,2082	0,0521
C3	0,7254	0,1814
IP1	0,0256	0,0064
IP2	0,1820	0,0455
IP3	0,0326	0,0082
IP4	0,1599	0,0400
IP5	0,5998	0,1500
LG1	0,3170	0,0793
LG2	0,6831	0,1708

After determining the global and local weights through the ANP method in Super Decisions, the priority ranking of the supply chain key performance indicators is as follows

Table 7.
Priority of the KPIs

Aspect	Aspect Weight	Key Performance Indicator	Priority Percentage	Priority Ranking
Finance (F)	0,326	Supplier Cost Saving Initiative	8,3%	5
		Productivity Ratio	16,7%	3
Customer (C)	0,217	Delivery Lead Time	1,7%	10
		Delivery Performance	5,2%	7
		Delivery Reliability	18%	1
Internal process (IP)	0,132	Supplier Lead Time	0,6%	12
		Supplier Rejection Rate	4,6%	8
		Purchase Order Cycle Time	1%	11
		Total Inventory Cost	4%	9
		Frequency of Delivery	15%	4
Learning and growth (LG)	0,325	Employee Skill	7,9%	6
		Product Development	17%	2

To develop a Supply Chain Management (SCM) performance evaluation system, the researchers conducted a literature review of best practices in the Food and Beverage industry, interviewed management to understand current SCM challenges, and identified and prioritized relevant SCM performance aspects for CV Jumjum based on inputs from interviews and journal studies. This systematic approach led to a proposed SCM performance evaluation system with Key Performance Indicators (KPIs) for CV Jumjum Station.

Table 11 outlines the quantitative data needed as inputs for the future SCM performance evaluation system, such as productivity levels, inventory costs, order cycle times, etc. This data will be collected from relevant operational documents like production reports, inventory records, and sales data through document study techniques. Having accurate quantitative data is crucial for developing an effective and measurable SCM performance evaluation system to aid strategic decision-making in managing the overall supply chain.

Table 8.
Reference Data for Calculating KPIs at CV Jumjum Station

No	Indikator	uom	Base Line	Target	Data Source	Weight
1	Supplier Cost saving initiative	%			Procurement report	8,3
2	Productivity Ratio	%			Financial report	16,7
3	Delivery Lead Time	%			Shipping report	1,7
4	Delivery performance	%			Customer delivery report	5,2
5	Delivery reliability	%			Shipping report	18
6	Supplier lead time	%			Procurement report	0,6
7	Supplier rejection rate	%			Goods receipt report	4,6
8	Purchase order cycle time	%			Procurement report	1
9	Total inventory cost	%			Inventory report	4
10	Frequency of delivery	%			Shipping report	15
11	Employee skill	%			HR report, training records	7,9
12	Product Development	%			Research and development report	17

A comprehensive design for the Supply Chain Management (SCM) performance evaluation system of CV Jumjum Station is proposed, encompassing precise weighting, carefully determined target values, and detailed performance achievements for each Key Performance Indicator (KPI). These elements are systematically measured and visually represented using the innovative traffic light system method, providing an intuitive overview of performance levels. This sophisticated evaluation system is developed to serve as a standardized framework for conducting periodic, in-depth assessments and maintaining rigorous control over various aspects of supply chain performance. The implementation aims to enhance strategic decision-making processes related to critical supply chain aspects, ensuring decisions are grounded in measurable, empirical data rather than subjective assessments. This data-driven approach is expected to significantly increase CV Jumjum Station's operational efficiency and market competitiveness, positioning the company more favorably within its competitive landscape and enabling more effective responses to evolving market dynamics and challenges.

Indicator	uom	Level										Calculation (Level x Weight)			
		1	2	3	4	5	6	7	8	9	10	Results	Level	Weight	KPI Score
…	%														
IP2	%	43,3	42	40,8	39,5	38,3	37	35,8	34,5	33,3	32	41	3	4,6	13,8
…	%														
												TOTAL			

Base Line Target Strecth Goals

Table 9. Supply Chain Management Performance Assessment Form Design for CV. Jumjum Station

The proposed system utilizes the Traffic Light System methodology as cited from Arini T. Soemohadiwidjojo (2015) to visually represent the company's performance achievement results. This traffic light analogy provides a straightforward way to evaluate performance based on the following indicators:

1. If KPI Score in Total is 100% ⩾ target = Green Status
2. If KPI Score in Total is 95% -100% from target = Yellow Status
3. If KPI Score in Total is < 95% from target = Red Status

By employing this traffic light system, the performance evaluation results can be easily interpreted and aligned with appropriate actions for performance improvement or maintaining high standards based on whether the indicators show green (satisfactory), yellow (caution), or red (needs attention) status.

CONCLUSION

Based on the analysis and identification results, it can be concluded that in this research, the main priority to improve Supply Chain Management (SCM) performance at CV Jumjum Station is the finance aspect, followed by employee learning and growth, customer service, and the company's internal processes. Specifically, three areas that need primary attention are delivery reliability, product development, and productivity ratio. Delivery reliability is crucial to ensure reliable and timely product delivery to customers. Product development is important to ensure innovation and quality improvement of products according to market needs. Meanwhile, the productivity ratio reflects the company's operational efficiency in producing outputs with available inputs. By prioritizing improvements in these three areas, it is expected that CV Jumjum Station can significantly improve its SCM performance and strengthen its competitive position in the market. This research recommends implementing a performance management system, particularly in the supply chain and logistics areas, gradually over 3 years to ensure successful implementation.

While this research provides valuable insights into improving supply chain performance at CV Jumjum Station, it has limitations in terms of focusing on a single case study, data collection within a specific timeframe, and reliance on a limited number of management respondents. Future research could expand the scope to multiple companies or industries, incorporate longitudinal data collection, and involve perspectives from various organizational levels and external stakeholders to enhance generalizability. Additionally, investigating the long-term impact of implementing the recommended performance management system and exploring the integration of emerging technologies like Industry 4.0 or digital supply chain solutions into the framework could further advance the field.

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