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Assessing Supply Chain Management with Supply Chain Operation Reference: A Case Study at Mommy House

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Abstract. MSME by Mommy House is a business engaged in manufacturing by producing a variety of healthy foods. West Java Province from 2019 the number of MSME engaged in the culinary increase form 1,985,763 units reaching 2,239,092 units at 2021. Management realizes that it's necessary for using the Supply Chain Operations Reference approach and the Analytical Hierarchy Process (AHP) to gain certainty about Supply Chain Management (SCM) performance, in order to satisfy customer desires with quality products. The MSME by Mommy House SCM process consists of suppliers, manufacturers, distribution and customers with SCM flows in the form of material, financial and information. The performance weighting of SCM uses the AHP approach, with the calculation results on the core plan of 0.113, the core source of 0.299, the core process of 0.332, the core delivering of 0.223 and the core process returning of 0.032. Snorm De Boer normalization the lowest and the highest score is 75 and 100. The highest final value is the make process with a performance value of 29.155 and the smallest is the return process of 3.113. Total supply chain performance value is 75.108 which is in the range of 70 to 90 meaning a good performance indicator.

Keyword: Customer, Distribution, Manufacture, Performance, Supplier, Supply Chain Management

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1. Introduction

Small industries in Indonesia from 2013 until now are increasingly important in efforts to develop national industries and support the economy as a whole. This is marked by the development of various types of small industries. The number of small industries in 2015 was 3.3 million units and increased to 64.2 million units in 2021. With this increase in the number of small industries, competition in the industrial world is a major challenge for business actors in carrying out their production activities. Industries are required to think creatively in implementing competitive strategies by producing goods or services that are of higher quality, cheaper and faster than competitors [1]. Customers expect quality products but at affordable prices, through the use of

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local sources of raw materials, as well as minimum operational costs without reducing product quality, especially during the current Covid19 pandemic [2].

The province that has the third largest development of micro and small industries is West Java province with an index value of 7.7%. The Food Industry is also the type of business that has the largest index share in the Micro and Small Industry throughout 2020, namely 24.48% [3]. West Java Province in 2019 to 2021 the number of Micro, Small and Medium Enterprises (MSME) engaged in the culinary (food and beverage) sector continues to increase, in 2019 the number of MSMEs is 1,985,763 units, in 2020 the number of MSMEs is 2,108,627 units and continues to increase until 2021 it reaches 2,239. 092 units [4]. Industry players are starting to realize that to provide a product that is of high quality, cheap and fast does not only require internal company improvements. These three aspects require the role of all parties, from suppliers, manufacturers, and distributors, to deliver products to consumers. Depok City Region, MSMEs have a sizable contribution to economic growth. Considering that the largest contributor to the Gross Regional Product (GRDP) in Depok City is MSMEs, namely as much as 65%, while 35% comes from various other businesses. The largest MSMEs are still dominated by culinary and fashion businesses. This was conveyed by the Mayor of Depok, Mohammad Idris after attending the MSME Festival event at Merdeka Square, Sukmajaya District.

MSME by Mommy House is a small and medium business engaged in manufacturing by producing a variety of healthy foods such as fruit salad, risol, processed potatoes, sponge cakes, pastries and solo sausages. MSME by Mommy House is located in Sawangan, Pancoranmas District, Rangkap Jaya Baru Village, Depok City. MSME by Mommy House has carried out supply chain management activities in its activities by collaborating with suppliers in procuring the main raw materials for making products, then carrying out production activities and distributing their products directly to consumers. Along with the rapid competition, companies need to carry out overall performance measurements, but companies do not yet have a supply chain performance measurement system.

Supply chain management performance can be measured using the Supply Chain Operations Reference (SCOR) method developed by the Supply Chain Council, which can be used in various contexts to design, describe, reconfigure various types of business commercial activities [5]. The implementation of the SCOR model improved the performance of the supply chain by reducing lead time and inventory levels [6]. SCOR is able to map the parts of the supply chain by dividing the supply chain process into five processes including plan, source, make, deliver and return [7]. Research on measuring supply chain performance with the SCOR approach also obtained performance indicator percentage values on the dimensions of reliability, responsiveness, flexibility, cost and assets [8]. The application of the SCOR method is expected to help MSME by Mommy House to identify the factors that influence that performance which can provide guidance and recommendations to improve supply chain performance, optimize inventory management, which can result in cost saving and increased business profitability [9].

2. Methodology

The research methodology is used to determine the main issues to be studied, so that existing problems will be more structured and can be easily resolved. The research flowchart is a chart that displays the stages of the research process starting from primary and secondary data collection, data processing, analysis and final conclusions from the research that has been done.

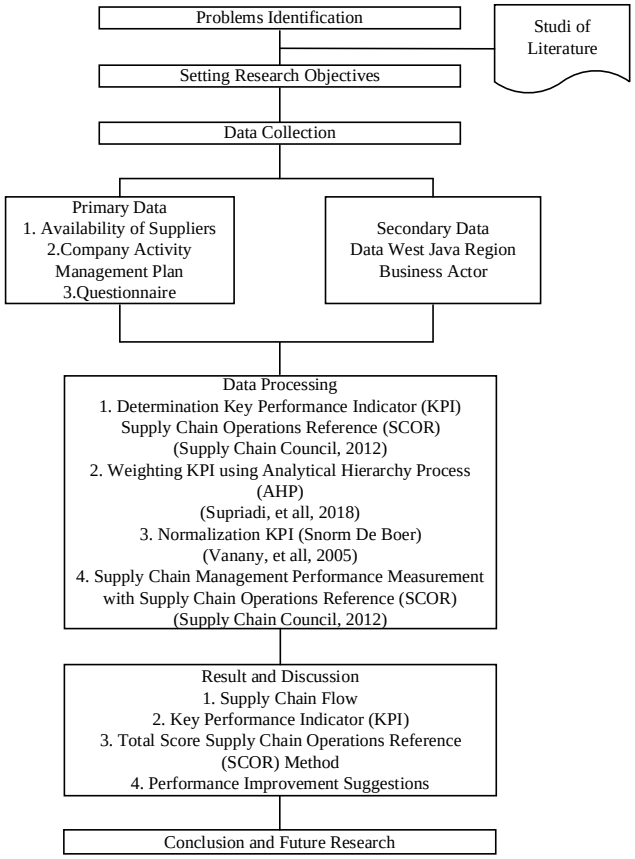

Figure 1 Research Flow Chart

The combination of SCOR and AHP can provide an integrated approach to improving overall supply chain performance for SMEs. By using SCOR to identify issues and AHP to make decision, SMEs can achieve significant improvements in efficiency, effectiveness, and supply chain sustainability. Based on the flow of MSME supply chain management by Mommy House in Depok, it is known that there are three types of flows, namely material flows, financial flows, and information flows.

3. Result and Discussion

Identification of Supply Chain Processes in SMEs by Mommy House. MSME by Mommy House in carrying out its business activities involves the stages of the supply chain starting from raw material suppliers to products reaching customers. Supply chain management that applies to MSME by Mommy House suppliers, manufactures, distribution and customers. The supply chain begins with suppliers who have a role in procuring raw materials for product production.

Table 1 Supplier Availability Data for MSME by Mommy House

No	Supplier Name	Raw material	*Lead Times*
1	**SuperIndo**	Milk Yogurt Flour Fruit Mayonnaise Cheese Chicken Coconut cream Egg Cooking oil	0
2	**Total**	Fruit Vegetables Yogurt Cheese	0
3	**Fresh fruit**	Fruit	0
4	**Eastern Indonesia**	Cheese Flour Bread crumb Mayonnaise Cooking oil *Thin Wall Food Containers*	0
5	**Raiden shop**	Cheese Flour Bread crumb Mayonnaise Cooking oil *Thin Wall Food Containers*	0
6	**Mandiri Plastic**	*Thin Wall Food Containers* Plastic spoon *Paper Bag*	2

Based on the flow of MSME supply chain management by Mommy House in Depok, it is known that there are three types of flows, namely material flows, financial flows, and information flows.

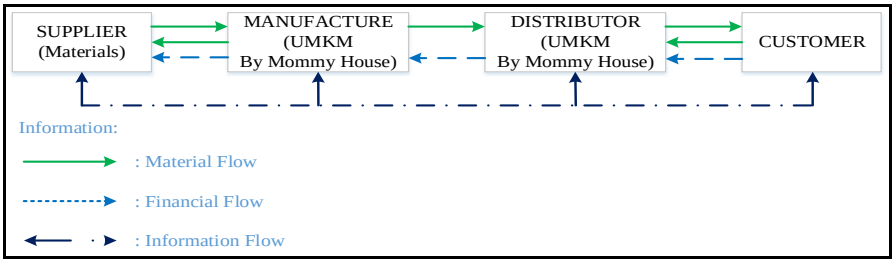

Figure 2 Flow of Supply Chain Management in MSME by Mommy House

Identification of Supply Chain Performance Weighting in MSMEs by Mommy House. Identification of Key Performance Indicators (KPI)The SCOR matrix consists of three levels, namely core processes, work dimensions or attributes and Key Performance Indicators (KPI). The first level is the core process consisting of the basic functions of the supply chain, namely plan, source, make, deliver and return. These basic functions are certain things to do in carrying out supply chain management. The second level is the dimensions or performance attributes consisting of reliability, responsiveness, flexibility, cost and assets. The third level is Key Performance Indicators (KPI), namely supply chain indicators that are appropriate to company conditions where key performance indicators are obtained from the results of literature studies and interviews with company owners [6].

Table 2 Identify Key Performance Indicators MSME by Mommy House

Core Process	Dimensions		*Key Performance Indicators* (Level 3)
Plan	***Reliability***	P.RL.1	Raw material forecasting accuracy
		P.RL.2	The level of raw material inventory in the raw material warehouse
	Responsiveness	P.RP.1	Speed in responding to customer requests
		P.RP.2	The timeframe identifies the specifications for the new product
		P.RP.3	Production scheduling timeframe
	Flexibility	P.FX.1	Flexibility in meeting customer demands
Source	***Reliability***	S.RL.1	Reliability of the fulfillment of raw materials by supplier
		S.RL.2	Number of raw material defects
	Responsiveness	S.RP.1	Raw material lead times
	Flexibility	S.FX.1	Availability of suppliers
		S.FX.2	Ability to meet increased demand for raw material orders
	Cost	S.CO.1	Cost of ordering raw materials
Make	***Reliability***	M.RL.1	Timely product completion
		M.RL.2	Reliability of employee performance in processing products
		M.RL.3	Efficiency of tools and machines in the manufacture of products
		M.RL.4	Number of defective products
		M.RL.5	Packaging is done correctly
	Responsiveness	M.RP.1	Average product turnaround time
		M.RP.2	Responsiveness produces a variety of orders
		M.RP.3	Handling damage to machines and equipment
	Flexibility	M.FX.1	Responsiveness meets changing demands at any given time
	Cost	M.CO.1	Production cost
	Assets	M.AS.1	The average service life of tools and machines
Deliver	***Reliability***	D.RL.1	The percentage of the number of deliveries against requests that the company can fulfill
		D.RL.2	Product delivery on time
		D.RL.3	Delivery of the right amount of product
		D.RL.4	Product delivery to the right destination
		D.RL.5	Reliability of sending without causing product defects
	Responsiveness	D.RP.1	The time required for product delivery
		D.RP.2	Reaction ability in handling sudden delivery requests
Return	***Reliability***	R.RL.1	Number of complaints from customers
		R.RL.2	Percentage of defective products returned to sellers
		R.RL.3	Ease of customers in filing complaints
	Responsiveness	R.RP.1	Handling time of complaints submitted
		R.RP.2	The time it takes the seller to replace a defective product

Core Process	Dimensions	*Key Performance Indicators* (Level 3)	
		R.RP.3	The time it takes the seller to provide a refund due to the customer receiving a defective product

Analytical Hierarchy Process (AHP) carried out to obtain the importance value or weight value of each level. This weight value will later be used as a calculation of the final value of supply chain performance[8][9]. The consistency of the data from the completed questionnaires must be tested for consistency to find the total weight of each criterion. The consistency test is denoted by CR (Consistency Ratio), the data will be consistent if the CR value ≤ 0.1 and if the CR value ≥ 0.1 then the data is inconsistent. Consistency and weighting tests were carried out using the Expert Choice 11 software.

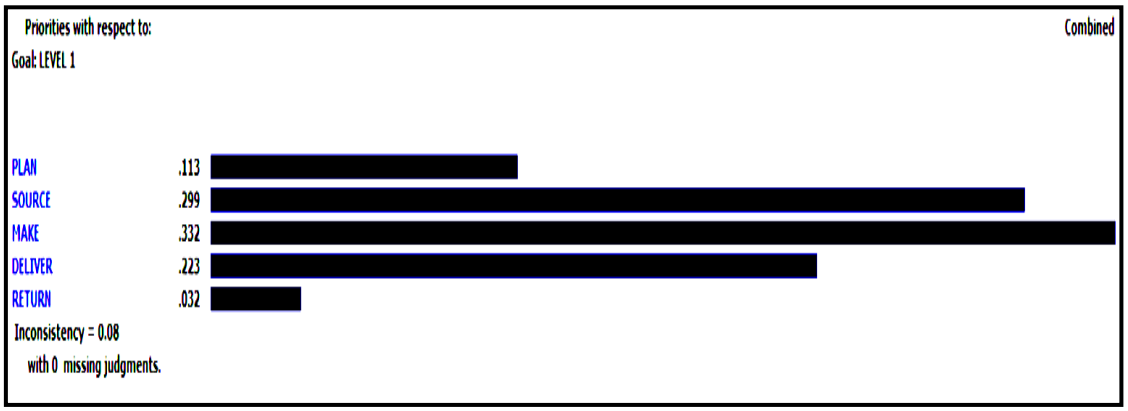

Figure 3 Level 1 Weighting Results

In the core process, it is known that the CR (Consistency Ratio) value or consistency index for weighting level 1 supply chain performance in MSME by Mommy House is 0.08, which means that the result indicates that the value obtained is consistent because CR ≤ 0.1. The five core processes above obtained the greatest weight, namely the make process of 0.332, which means the company considers the make process important.

Next, a consistency test is carried out for the performance attributes of the plan, source, make, deliver and return processes based on their basic functions.

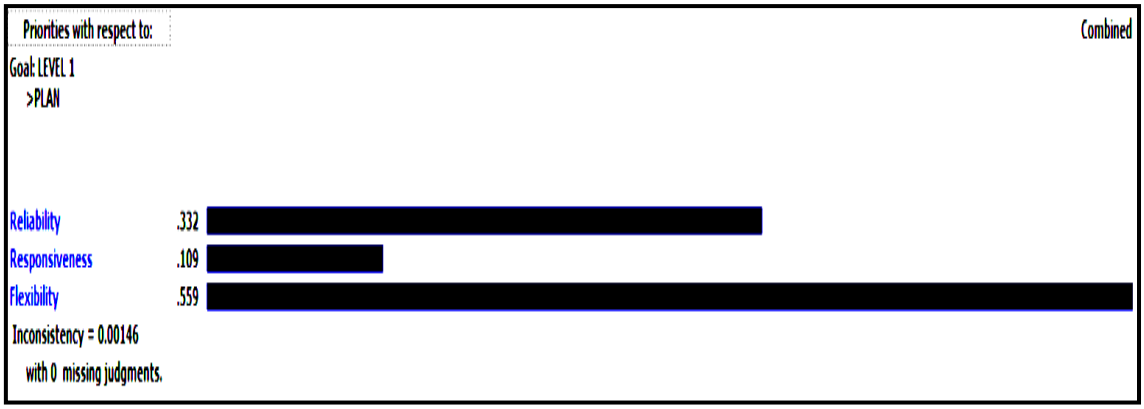

Figure 4 Test The Consistency of The Plan Process Performance Attributes

Figure 5 Test The Consistency of The Source Process Performance Attribute

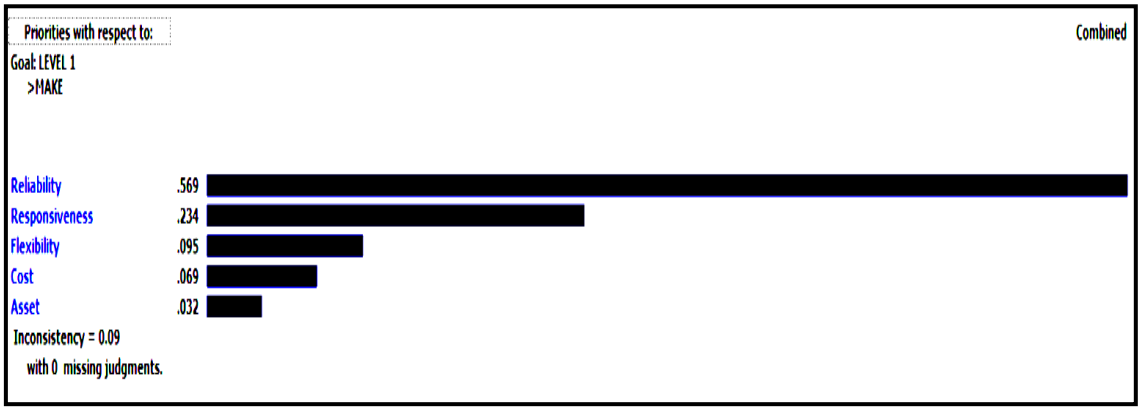

Figure 6 Test The Consistency of The Make Process Performance Attributes

Level 3 weighting is a process to determine the level of importance of the Key Performance Indicator (KPI) for each dimension, namely reliability responsiveness, flexibility, cost and assets and for each core process, namely plan, source, make, deliver and return. KPI weighting is carried out using the same method with the help of Expert Choice 11 software, the results of which also show the Consistency Ratio (CR) value.

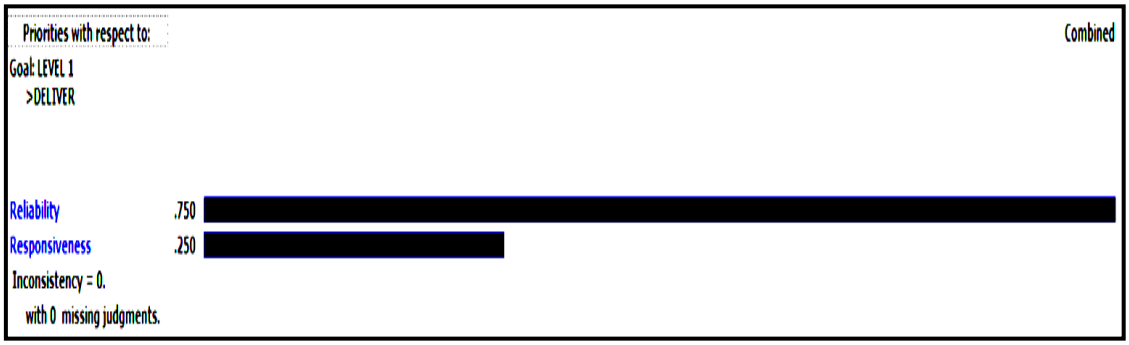

Figure 7 Test the consistency of the deliver process performance attributes

Figure 8 Test the consistency of the return process performance attributes

Table 3 Summary of Key Performance Indicator Weight Values

	Key performance indicators	***Consistency ratio***	**Weight**
P.RL.1	Raw material forecasting accuracy		0.750
P.RL.2	The level of raw material inventory in the raw material warehouse	0.000	0.250
P. RP. 1	Speed in responding to customer requests		0.627
P.RP.2	The timeframe identifies the specifications for the new product	0.080	0.094
P.RP.3	Production scheduling timeframe		0.28
P. FX. 1	Flexibility in meeting customer demands	0.000	1,000
S.RL.1	Reliability of the fulfillment of raw materials by suppliers	0.000	0.250
S.RL.2	Number of raw material defects		0.750
S.RP.1	Raw material lead times	0.000	1,000
S. FX. 1	Availability of suppliers	0.000	0.750
S. FX. 2	Ability to meet increased demand for raw material orders		0.250
S. CO. 1	Cost of ordering raw materials	0.000	1,000
M.RL. 1	Timely product completion	0.090	0.145
M. RL. 2	Reliability of employee performance in processing products		0.391
M.RL. 3	Efficiency of tools and machines in the manufacture of products	0.000	0.073
M. RL. 4	Number of defective products	0.000	0.202
M.RL. 5	Packaging is done correctly		0.189
M.RP.1	Average product turnaround time	0.080	0.226
M.RP.2	Responsiveness produces a variety of orders	0.090	0.674
M.RP.3	Handling damage to machines and equipment	0.000	0.101
M. FX. 1	Responsiveness meets changing demands at any given time	0.000	1,000
M. CO. 1	Production cost	0.000	1,000
M.AS. 1	The average service life of tools and machines		1,000
D. RL. 1	The percentage of the number of deliveries against requests that the company can fulfill	0.090	0.201
D. RL. 2	Product delivery on time		0.053
D. RL. 3	Delivery of the right amount of product		0.267
D. RL. 4	Product delivery to the right destination	0.000	0.076
D. RL. 5	Reliability of sending without causing product defects	0.000	0.402
D.RP.1	The time required for product delivery	0.000	0.200
D.RP.2	Reaction ability in handling sudden delivery requests		0.800
R.RL.1	Number of complaints from customers	0.090	0.167
R.RL.2	Percentage of defective products returned to sellers	0.010	0.094
R.RL.3	Ease of customers in filing complaints	0.009	0.740
R.RP.1	Handling time of complaints submitted		0.634
R.RP.2	The time it takes the seller to replace a defective product	0.000	0.174
R.RP.3	The time it takes the seller to provide a refund due to the customer receiving a defective product		0.192

*Scoring system*serves to equalize the value scale of each Key Performance Indicator (KPI). So that the company is able to measure and determine the level of achievement of each Key

Performance Indicator (KPI). The scoring system uses the Snorm De Boer normalization process [10].

Table 4 Scoring System to Normalize Snorm De Boer

	Key performance indicators		**Si**	**Smin**	**Smax**	**Normalized Score**
P.RL.1	Raw material forecasting accuracy	%	98	60	100	95.00
P.RL.2	The level of raw material inventory in the raw material warehouse	%	95	50	100	90.00
P.RP.1	Speed in responding to customer requests	Day	1	3	1	100.00
P.RP.2	The timeframe identifies the specifications for the new product	Perc	3	7	3	100.00
P.RP.3	Production scheduling timeframe	Hour	1.2	3	1	90.00
P.FX.1	Flexibility in meeting customer demands	%	99	80	100	95.00
S.RL.1	Reliability of the fulfillment of raw materials by suppliers	%	98	70	100	93.33
S.RL.2	Number of raw material defects	units	0	1	0	100.00
S.RP.1	Raw material lead times	Day	0.5	2	0.5	100.00
S.FX.1	Availability of suppliers	Shop	4	1	5	75.00
S.FX.2	Ability to meet increased demand for raw material orders	%	95	80	100	75.00
S.CO.1	Cost of ordering raw materials	Rp	20	50	10	75.00
M.RL.1	Timely product completion	%	98	50	100	96.00
M.RL.2	Reliability of employee performance in processing products	%	95	60	99	89.74
M.RL.3	Efficiency of tools and machines in the manufacture of products	%	100	75	100	100.00
M.RL.4	Number of defective products	units	0	1	0	100.00
M.RL.5	Packaging is done correctly	%	100	0	100	100.00
M.RP.1	Average product turnaround time	Minute	5.5	10	5.4	97,83
M.RP.2	Responsiveness produces a variety of orders	%	100	80	100	100.00
M.RP.3	Handling damage to machines and equipment	%	70	50	75	80.00
M.FX.1	Responsiveness meets changing demands at any given time	%	100	90	100	100.00
M.CO.1	Production cost	Rp	50	80	45	85.71
M.AS.1	The average service life of tools and machines	Month	24	20	24	100.00
D.RL.1	The percentage of the number of deliveries against requests that the company can fulfill	%	100	95	100	100.00
D.RL.2	Product delivery on time	%	97	85	98	92.31
D.RL.3	Delivery of the right amount of product	%	100	99	100	100.00
D.RL.4	Product delivery to the right destination	%	100	99	100	100.00
D.RL.5	Reliability of sending without causing product defects	%	97	87	100	76,92
D.RP.1	The time required for product delivery	Hour	1	3	0.5	80.00
D.RP.2	Reaction ability in handling sudden delivery requests	Hour	1.3	3	1	85.00
R.RL.1	Number of complaints from customers	units	0	2	0	100.00
R.RL.2	Percentage of defective products returned to sellers	%	0	1	0	100.00
R.RL.3	Ease of customers in filing complaints	Hour	1	4.5	0.5	87.50
R.RP.1	Handling time of complaints submitted	Hour	1	3	1	100.00
R.RP.2	The time it takes the seller to replace a defective product	Hour	1	2	1	100.00
R.RP.3	The time it takes the seller to provide a refund due to the customer receiving a defective product	Hour	2	5	1	75.00

This normalization calculation is obtained based on the actual value of each indicator. The first line in the table above shows the symbol P.RL.1 which means the core plan process then the reliability dimension and the first indicator is the accuracy of raw material estimates with the

indicator unit using percent (%). The actual value achieved by the raw material accuracy indicator is 98%, the lowest value achieved is 60% and the highest value achieved is 100%, a normalized score of 95.00 is obtained. This indicates that the greater the company's accuracy in estimating food ingredients, the better.

Identification of Supply Chain Performance Final Value Calculation. Calculation of the final value of supply chain performance at MSME by Mommy House which consists of calculating the final value of the key performance indicator, calculating the final value of dimensions and calculating the final value of the core process[5][7].

Calculation of Key Performance Indicator Final Value. The weight value on the KPI obtained in the previous Analytical Hierarchy Process (AHP) calculation is multiplied by the value from the Snorm De Boer normalization scoring system calculation to get the performance value for each KPI. The following is an example of calculating the final value of a key performance indicator.

Table 5 The Result of Calculating the Final Value of The Key Performance Indicator

Core Process	Dimensions	*Key Performance Indicators*	Score	Weight	Performance Value	Total Per Dimension
Plan	*Reliability*	Raw material forecasting accuracy	95.00	0.75	71.25	93.75
		The level of raw material inventory in the raw material warehouse	90.00	0.25	22.50	
	Responsiveness	Speed in responding to customer requests	100.00	0.627	62,70	97.30
		The timeframe identifies the specifications for the new product	100.00	0.094	9.40	
		Production scheduling timeframe	90.00	0.28	25,20	
	Flexibility	Flexibility in meeting customer demands	95.00	1	95.00	95.00
Source	*Reliability*	Reliability of the fulfillment of raw materials by suppliers	93.33	0.25	23,33	98.33
		Number of raw material defects	100.00	0.75	75.00	
	Responsiveness	Raw material lead times	100.00	1	100.00	100.00
	Flexibility	Availability of suppliers	75.00	0.75	56,25	75.00
		Ability to meet increased demand for raw material orders	75.00	0.25	18.75	
	Cost	Cost of ordering raw materials	75.00	1	75.00	75.00
Make	*Reliability*	Timely product completion	96.00	0.145	13.92	81.49
		Reliability of employee performance in processing products	89.74	0.391	35.09	
		Efficiency of tools and machines in the manufacture of products	100.00	0.073	7.30	
	Reliability	Number of defective products	100.00	0.202	20,20	97.59
		Packaging is done correctly	100.00	0.189	18.90	
	Responsiveness	Average product turnaround time	97,83	0.226	22,11	

Core Process	Dimensions	*Key Performance Indicators*	Score	Weight	Performance Value	Total Per Dimension
		Responsiveness produces a variety of orders	100.00	0.674	67,40	
		Handling damage to machines and equipment	80.00	0.101	8.08	
	Flexibility	Responsiveness meets changing demands at any given time	100.00	1	100.00	100.00
	Cost	Production cost	85.71	1	85.71	85.71
	Assets	The average service life of tools and machines	100.00	1	100.00	100.00
Deliver		The percentage of the number of deliveries against requests that the company can fulfill	100.00	0.201	20,10	
		Product delivery on time	92.31	0.053	4.89	
	Reliability	Delivery of the right amount of product	100.00	0.267	26,70	90,22
		Product delivery to the right destination	100.00	0.076	7,60	
		Reliability of sending without causing product defects	76,92	0.402	30,92	
	Responsiveness	The time required for product delivery	80.00	0.2	16.00	84.00
		Reaction ability in handling sudden delivery requests	85.00	0.8	68.00	
Return		Number of complaints from customers	100.00	0.167	16.70	
	Reliability	Percentage of defective products returned to sellers	100.00	0.094	9.40	90.85
		Ease of customers in filing complaints	87.50	0.74	64,75	
	Responsiveness	Handling time of complaints submitted	100.00	0.634	63,40	
		The time it takes the seller to replace a defective product	100.00	0.174	17.40	
		The time it takes the seller to provide a refund due to the customer receiving a defective product	75.00	0.192	14.40	95,20

Calculation of Final Dimension Value. The total value of each dimension obtained in the calculation of the previous key performance indicator final value is multiplied by the value from the Analytical Hierarchy Process (AHP) calculation of each previous dimension to obtain the performance value of each dimension [7].

Table 6 The Result of The Calculation of The Final Dimension Value

Core Process	Dimensions	Score	Weight	Performance Value	Total Per Core Process
Plan	*Reliability*	93.75	0.332	31,13	94.84
	Responsiveness	97.30	0.109	10.61	
	Flexibility	95.00	0.559	53.11	
Source	*Reliability*	98.33	0.130	12.78	41.31
	Responsiveness	100.00	0.052	5.20	
	Flexibility	75.00	0.311	23.33	
	Cost	75.00	0.507	38.03	
Make	*Reliability*	81.49	0.569	46.37	87.82
	Responsiveness	97.59	0.234	22.84	
	Flexibility	100.00	0.095	9.50	
	Cost	85.71	0.069	5.91	
	Assets	100.00	0.032	3.20	
Deliver	*Reliability*	90.22	0.750	67.66	88.66
	Responsiveness	84.00	0.250	21.00	
Return	*Reliability*	90.85	0.200	18.17	94.33
	Responsiveness	95.20	0.800	76.16	

Core Process End Value Calculation. The total value of each core process obtained in the calculation of the final value of the previous dimension is multiplied by the value from the Analytical Hierarchy Process (AHP) calculation of each previous core process to obtain the performance value of each process.

Table 7 The Result of Calculating the Final Value of The Core Process

Core Process	Score	Weight	Final score
Plan	94,84	0.113	10,716
Source	41,31	0.299	12,351
Make	87,82	0.332	29.155
Deliver	88,66	0.223	19,772
Return	94.33	0.033	3,113
Total			75,108

Based on the value of supply chain performance from level 1, level 2 to level 3, the total value of supply chain performance is obtained for MSME by Mommy House.

Table 8 Total Value of Supply Chain Performance at MSME by Mommy House

Performance Value	Range	Performance Indicators
75,108	70 – 90	*Good*

The proposed performance improvement for MSME by Mommy House is based on the total performance value obtained by maximizing the performance of all aspects of the core process.

Table 9 Proposed Performance Improvement in MSMEs by Mommy House

Core Process	Proposed Performance Improvement
Plan	Perform forecasting processes and understand market conditions
Source	Perform regular cooperation or increase supplier loyalty
Make	Carry out quality control and increase production capacity
Deliver	Enhanced with delivery scheduling and understanding the lead time of each destination
Return	Providing special complaint services

4. Conclusion and Future Research

The supply chain management process that applies to MSME by Mommy House is carried out by several factors, namely suppliers, manufacturers, distribution and customers, with three (3) supply chain management streams, namely material flow which is a flow of physical form both raw materials and finished products, financial flows is the flow of funds that moves from downstream to upstream and is one-way in nature, and the flow of information is the flow of information needed to support the business processes being carried out.

Supply chain management performance weighting on MSME by Mommy House uses the method Analytical Hierarchy Process (AHP) produces plan has a weight of 0.113, source has a weight of 0.299, make has a weight of 0.332, deliver has a weight of 0.223 and return has a weight of 0.032. The scoring system with Snorm De Boer normalization produces a normalized score for each indicator at level 3 with the lowest score of 75.00 and the highest score of 100.00.

The final value of supply chain performance for MSME By Mommy House, the largest is make with a performance value of 29.155 and the smallest is a return of 3.113. Based on the value of supply chain performance for level 1, level 2 to level 3, a total performance value of 75.108 is obtained. The performance value is in the range of 70 – 90 indicating the performance indicator is good or good. Company management needs to make several efforts to improve all aspects of performance, in order to achieve a performance indicator monitoring system that is in an excellent or perfect position with a supply chain performance value of ≥ 90.

Several future research ideas that can be carried out for measuring SCM performance in MSMEs, including conducting further research on the factors that affect SCM performance in MSMEs, such as internal and external factors that may differ from those that affect SCM performance in larger companies. There is also development of SCM performance measurement methods that are more suitable for MSMEs' characteristics, such as asset-based and capability-based measurements that are more suitable for small-scale businesses. Coupled with testing and developing SCM performance measurement models that have been developed in large companies to be applied in MSMEs, as well as investigating the impact of financial and non-financial factors on SCM performance in MSMEs and making a comparison between MSMEs and large companies in terms of measuring SCM performance.

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