ANALYSIS SUPPLY CHAIN PERFORMANCE BASED SUPPLY CHAIN OPERATION REFERENCE (SCOR) IN PAVING BLOCK INDUSTRY

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ABSTRACT
Indonesia's increasingly rapid development in the construction sector is one of the attractive advantages, especially for the precast concrete and paving block industries. One of the paving block producing areas is X area. This research takes 3 research objects. The aim of this research is to determine and analyze supply chain performance in the paving block industry using a qualitative approach by collecting data through interviews and questionnaires. The initial step of the research is to find out the performance value based on predetermined metrics. The value of each supply chain performance needs to go through a parameter equalization process called Snorm De Boer normalization so that the value obtained can be used as an indicator to be measured using the Supply Chain Operation Reference (scor) method and then the results of the measurements can be obtained for conditions that really require improvement efforts will be measured using FMEA. From the calculation results, it was found that the lowest supply chain performance values in the three paving block industries were found in the making process, especially in the paving block drying process. This needs to be repaired immediately, such as using additional materials or updating the raw materials used. Meanwhile, of the three companies that has the best supply chain performance is PT C.

Keywords: *Supply Chain Performance, SCOR, FMEA, Snorm De Boer, Paving block industry.*

1. INTRODUCTION

Infrastructure development is apart from being a pillar for realizing a Golden Indonesia 2045. Currently it is also believed to play an important role in encouraging economic growth both at the national and regional levels. Realizing quality infrastucture development cannot be separated from the construction industry sector. However, procuring materials for a construction project is a complicated matter especially in timely procurement. Effective supply chain management plays a major role in preventing delays in material delivery. One of the construction materials that is often used is precast concrete.

According to the Indonesian National Standard (SNI) 7832-2012, precast or precast concrete is a construction raw material whose constituent components are printed and the processing is carried out at a different location to the project or construction area with the aim of speeding up the construction process.(PT Waskita Beton Precast Tbk., 2023). One area whose company operates in the precast concrete industry is X area.

Precast concrete consist of several types such as concrete panel, concrete buis, kastin and paving block. From the results of the author's survey with one of the industry owners, the author knows that one type of production produced by the precast industry

that doesn't depend on time is paving blocks. The research object of this article is 3 different industries in X area.

Table 1 : Pre-Survey Result Data October 2023
Source : Interview Data, 2023

ACTIVITY	NAME OF COMPANY		
	PT A	PT B	PT C
Paving Blocks produced in 1 day are in meters (1 meter = 50 pieces)	5 m	75 m	35 m

Based on the table above, it can be seen that there are significant differences between the paving block industries in area X regarding the output produced. This condition is though to occur due to differences in the supply chain implemented by each company. This condition needs to be analyzed using a method called SCOR.

2. LITERATURE REVIEW

In this era of globalization, competition in the business world is getting tighter and consumer demands are getting higher. Consumer demands to get quality goods, low prices and delivery on time. This requires collaboration and coordination with all parties, from raw material suppliers to product delivery to consumers.

Supply Chain Management

According to Ratnaningtyas (2022), "Supply chain management is a process that regulates the flow of goods or services and related information from origin to consumer." Meanwhile, according to Purwaningsih et al., (2021), "Supply Chain Management certainly does not only include materials and output or finished goods, but also includes supporting materials, components, spare parts, work in process (semi-finished goods) and various types of equipment (supplies) used to support the company's operational activities as a whole. comprehensive.". Based on these definitions, supply chain management is a system that manages all company processes, including raw materials to finished goods, including additional materials, semi-finished goods and all company operational activities.

Supply Chain Performance Measurement

Supply chain performance measurement is a measurement process carried out on each process in the company's supply chain. In addition, measurement results can provide information regarding the details of each performance process that is below company standards and requires improvement, so that the company can make adjustments and evaluate. Sriwana et al., (2021).

Supply Chain Operation Reference (SCOR)

One method used to measure performance is the Supply Chain Operational Reference (SCOR) which has five process, plan, source, make, deliver and return. Sriwana et al., (2021). Meanwhile in the SCOR model there are 5 performance attributes used in measuring supply chain performance, these attributes include: reliability, responsiveness, agility, cost, asset management efficiency. By using the SCOR method, it is hoped that measuring the effectiveness of supply chain performance will be more optimal because it does not only look at costs as a benchmark. The advantage of the SCOR Model as a process reference model is its ability to integrate business process reengineering, benchmarking, and best practices analysis into the supply chain framework. Fathoni et al., (2022).

Failure Mode Effect and Analysis (FMEA)

FMEA is a way of implementing risk control by identifying and preventing as many potential failures as possible from occurring in the supply chain or when the failure process has not yet occurred so as to minimize the risk of failure occurring in the future. Sumantika, et al., (2022). Meanwhile, according to Wardhani & Utomo, (2023), FMEA calculates risk using the FMEA method using the Risk Priority Number (RPN) for each failure mode by multiplying the severity (S), occurrence (O), and detection (D) values.

$$RPN = S \times O \times D$$

DATA AND RESEARCH TECHNIQUE ANALISYS

Research Methodology

In this research, researchers used a qualitative approach because the data obtained in this research was based on the phenomena studied regarding the cases studied. This research uses a research approach that focuses more on an in-depth understanding of a phenomenon, the phenomenon in this research itself concerns supply chain performance in the paving block industry. In this approach, research involves researchers directly interacting with research subjects

Variable operationalization

The variable in this research is supply chain performance. The sub-variables in the research are plan with indicators of reliability and responsiveness, source with the indicators measured are reliability and responsiveness, make with indicators of reliability, responsiveness and asset management, deliver with indicators of reliability and cost, and return with indicators of responsiveness and agility. Apart from that, another indicator is measuring supply chain performance using the SCOR model. Finally, improvement efforts use the FMEA technique. The data type for all indicators is quantitative.

Data Analysis Techniques

The sampling technique used in the research was non-probability sampling with data collection techniques using purposive sampling. Data collection techniques are carried out in 2 ways. First, the interview was structured because the researcher used the same list of questions for each informant. Second, open questionnaires because open questionnaires allow informants to be more open in providing answers more freely and without restrictions. Meanwhile, the data analysis technique used in this research is

qualitative descriptive analysis.

RESULT AND DISCUSSION

The step taken in this research after knowing the value of each company's supply chain performance is to measure the data that has been obtained using the SCOR method. However, each supply chain performance data obtained has a different scale of measurement with different weights so that the results do not reflect the company's actual performance. In this stage, a parameter equalization process is required. This process can be carried out through the Snorm De Boer normalization process, with the following formula:

$$\text{Snorm (skor)} = \frac{(Si - Smin)}{Smax - Smin} \text{ x } 100$$

S_i = Actual indicator value

S_{min} = Worst performance value

S_{max} = Best performance value

Analysis of research results using the de Boer norm will be presented in figures 1 to 3, then look for process values using the SCOR method in figures 4 to 6:

Measuring Supply Chain Performance Using the SCOR (Supply Chain Operation Reference) Model in the Paving Block Industry in Area X

Figure 1 : Measurement Supply Chain Performance Attributes of PT A

PROSES	ATRIBUT	METRIK	SNORM	BOBOT	SNORM X BOBOT	SKOR TOTAL
Plan	Realibility	RL.3.37 Forecast Accuracy	86,96	1,00	86,96	86,96
	Responsiveness	RS.3.29 Establish Sourcing Plans Cycle Time	100,00	0,20	20,00	80,00
		RS.3.13 Balance Production Resources with Production Requirements Cycle Time	100,00	0,20	20,00	
		RS.3.28 Establish Production Plans Cycle Time	100,00	0,20	20,00	
		RS. 3.27 Establish Delivery Plans Cycle Time	100,00	0,20	20,00	
		RS.3.26.Communicate Return Plan Cycle Time	0,00	0,20	0,00	
Source	Realibility	RL.3.18 Orders/Lines Processed Complete	100,00	0,20	20,00	100,00
		RL. 3.19 Orders/Lines Received Defect Free	100,00	0,20	20,00	
		RL.3.20 Order/Lines Received On-Time to Demand Requirements	100,00	0,20	20,00	
		RL 3.25 Product Transferred On-Time to Demand Requirement	100,00	0,20	20,00	
		RL 3.27 Schedules Changed within Supplier's Lead Time	100,00	0,20	20,00	
	Responsiveness	RS. 3.8 Authorize Supplier Payment Cycle Time	100,00	1,00	100,00	100,00
Make	Realibility	RL. 3.49 Shedule Achievement	100,00	0,50	50,00	99,67
		RL 3.58 Yield	99,35	0,50	49,67	
	Responsiveness	RS. 3.101 Produce and Test Cycle Time	20,00	0,33	6,67	30,00
		RS 3.123 Schedule Production Activities Cycle Time	20,00	0,33	6,67	
		RS 3.1242 Package Cycle Time	50,00	0,33	16,67	
	Asset Management	AM. 3.9 Capacity Utilization Raw Material	62,27	0,33	20,76	76,31
		AM 3.9 Capacity Utilization Human Resource	66,67	0,33	22,22	
		AM 3.9 Capacity Utilization Machine	100,00	0,33	33,33	
Deliver	Realibility	RL. 3.32 Customer Commit Date Achievement Time Customer	100,00	0,17	16,67	100,00
		RL 3.33 Delivery Item Accuracy	100,00	0,17	16,67	
		RL 3.34 Location Accuracy	100,00	0,17	16,67	
		RL 3.35 Delivery Quantity Accuracy	100,00	0,17	16,67	
		RL. 3.41 Orders Delivered Damage Free Conformance	100,00	0,17	16,67	
		RL. 3.42 Orders Delivered Defect Free	100,00	0,17	16,67	
	Cost	CO. 3.15 Order Delivery and / or Install Costs	100,00	1,00	100,00	100,00
Return	Responsiveness	RS. 3.136 Transfer Defective Product Cycle Time	0,00	1,00	0,00	0,00
	Agility	AG. 2.3 Upside Deliver Return Flexibility	0,00	1,00	0,00	0,00

Source: Data Processing Results, 2024

The normalized values in the image show that in PT A supply chain performance, the metrics in the make process, especially in the responsiveness performance attribute, have a value of <40, so if you look at the value of this process, it certainly has poor performance and needs to be addressed immediately. This will be further analyzed in the next stage.

The total score value for each performance attribute will be used as a reference for measuring supply chain performance. These values are as follows:

1. Plans

In the plan process, the reliability attribute has a value of 86.96 and responsiveness of 80.00.

2. Source

In the source process, the reliability attribute has a value of 100.00 and responsiveness of 100.00.

3. Make

In the make process, the reliability attribute has a value of 99.67; responsiveness was 30.00 and asset management was 76.31.

4. Deliver

In the deliver process, the reliability attribute has a value of 100.00 and a cost of 100.00.

5. Return

In the return process, the responsiveness attribute has a value of 0.00 and agility of 0.00

Figure 2 : Measurement Supply Chain Performance Attributes PT B

PROSES	ATRIBUT	METRIK	SNORM	BOBOT	SNORM X BOBOT	SKOR TOTAL
Plan	*Realibility*	*RL.3.37 Forecast Accuracy*	94,65	1,00	94,65	94,65
	Responsiveness	*RS.3.29 Establish Sourcing Plans Cycle Time*	100,00	0,20	20,00	80,00
		RS.3.13 Balance Production Resources with Production Requirements Cycle Time	100,00	0,20	20,00	
		RS.3.28 Establish Production Plans Cycle Time	100,00	0,20	20,00	
		RS. 3.27 Establish Delivery Plans Cycle Time	100,00	0,20	20,00	
		RS.3.26.Communicate Return Plan Cycle Time	0,00	0,20	0,00	
Source	*Realibility*	*RL.3.18 Orders/Lines Processed Complete*	100,00	0,20	20,00	100,00
		RL. 3.19 Orders/Lines Received Defect Free	100,00	0,20	20,00	
		RL.3.20 Order/Lines Received On-Time to Demand Requirements	100,00	0,20	20,00	
		RL 3.25 Product Transferred On-Time to Demand Requirement	100,00	0,20	20,00	
		RL 3.27 Schedules Changed within Supplier's Lead Time	100,00	0,20	20,00	
	Responsiveness	*RS. 3.8 Authorize Supplier Payment Cycle Time*	100,00	1,00	100,00	100,00
Make	*Realibility*	*RL. 3.49 Shedule Achievement*	100,00	0,50	50,00	99,94
		RL 3.58 Yield	99,88	0,50	49,94	
	Responsiveness	*RS. 3.101 Produce and Test Cycle Time*	20,00	0,33	6,67	30,00
		RS 3.123 Schedule Production Activities Cycle Time	20,00	0,33	6,67	
		RS 3.1242 Package Cycle Time	50,00	0,33	16,67	
	Asset Management	*AM. 3.9 Capacity Utilization Raw Material*	82,90	0,33	27,63	85,97
		AM 3.9 Capacity Utilization Human Resource	75,00	0,33	25,00	
		AM 3.9 Capacity Utilization Machine	100,00	0,33	33,33	
Deliver	*Realibility*	*RL. 3.32 Customer Commit Date Achievement Time Customer*	100,00	0,17	16,67	100,00
		RL 3.33 Delivery Item Accuracy	100,00	0,17	16,67	
		RL 3.34 Location Accuracy	100,00	0,17	16,67	
		RL 3.35 Delivery Quantity Accuracy	100,00	0,17	16,67	
		RL. 3.41 Orders Delivered Damage Free Conformance	100,00	0,17	16,67	
		RL. 3.42 Orders Delivered Defect Free	100,00	0,17	16,67	
	Cost	*CO. 3.15 Order Delivery and / or Install Costs*	100,00	1,00	100,00	100,00
Return	Responsiveness	*RS. 3.136 Transfer Defective Product Cycle Time*	0,00	1,00	0,00	0,00
	Agility	*AG. 2.3 Upside Deliver Return Flexibility*	0,00	1,00	0,00	0,00

Source: Data Processing Results, 2024

The normalized value of PT B metrics shows that the metrics in the make process, especially in the responsiveness performance attribute, have metrics that have a value of <40, so if you look at the value of this process, it certainly has poor performance and needs to be addressed immediately. This will be further analyzed in the next stage.From the image, the total score value for each performance attribute is obtained which is then used as a reference for measuring supply chain performance. These values are as follows:

1. Plans

In the plan process, the reliability attribute has a value of 94.65 and responsiveness of 80.00.

2. Source

In the source process, the reliability attribute has a value of 100.00 and responsiveness of 100.00.

3. Make

In the make process the reliability attribute has a value of 99.94; responsiveness was 30.00 and asset management was 85.97.

4. Deliver

In the deliver process, the reliability attribute has a value of 100.00 and a cost of 100.00.

5. Return

In the return process, the responsiveness attribute has a value of 0.00 and agility of 0.00.

Figure 3 : Measurement Supply Chain Performance Attributes PT C

PROSES	ATRIBUT	METRIK	SNORM	BOBOT	SNORM X BOBOT	SKOR TOTAL
Plan	Realibility	RL.3.37 Forecast Accuracy	93,76	1,00	93,76	93,76
	Responsiveness	RS.3.29 Establish Sourcing Plans Cycle Time	100,00	0,20	20,00	80,00
		RS.3.13 Balance Production Resources with Production Requirements Cycle Time	100,00	0,20	20,00	
		RS.3.28 Establish Production Plans Cycle Time	100,00	0,20	20,00	
		RS. 3.27 Establish Delivery Plans Cycle Time	100,00	0,20	20,00	
		RS.3.26.Communicate Return Plan Cycle Time	0,00	0,20	0,00	
Source	Realibility	RL.3.18 Orders/Lines Processed Complete	100,00	0,20	20,00	100,00
		RL. 3.19 Orders/Lines Received Defect Free	100,00	0,20	20,00	
		RL.3.20 Order/Lines Received On-Time to Demand Requirements	100,00	0,20	20,00	
		RL 3.25 Product Transferred On-Time to Demand Requirement	100,00	0,20	20,00	
		RL 3.27 Schedules Changed within Supplier's Lead Time	100,00	0,20	20,00	
	Responsiveness	RS. 3.8 Authorize Supplier Payment Cycle Time	100,00	1,00	100,00	100,00
Make	Realibility	RL. 3.49 Shedule Achievement	100,00	0,50	50,00	99,97
		RL 3.58 Yield	99,93	0,50	49,97	
	Responsiveness	RS. 3.101 Produce and Test Cycle Time	50,00	0,33	16,67	50,00
		RS 3.123 Schedule Production Activities Cycle Time	50,00	0,33	16,67	
		RS 3.1242 Package Cycle Time	50,00	0,33	16,67	
	Asset Management	AM. 3.9 Capacity Utilization Raw Material	93,62	0,33	31,21	91,21
		AM 3.9 Capacity Utilization Human Resource	80,00	0,33	26,67	
		AM 3.9 Capacity Utilization Machine	100,00	0,33	33,33	
Deliver	Realibility	RL. 3.32 Customer Commit Date Achievement Time Customer	100,00	0,17	16,67	100,00
		RL 3.33 Delivery Item Accuracy	100,00	0,17	16,67	
		RL 3.34 Location Accuracy	100,00	0,17	16,67	
		RL 3.35 Delivery Quantity Accuracy	100,00	0,17	16,67	
		RL. 3.41 Orders Delivered Damage Free Conformance	100,00	0,17	16,67	
		RL. 3.42 Orders Delivered Defect Free	100,00	0,17	16,67	
	Cost	CO. 3.15 Order Delivery and / or Install Costs	100,00	1,00	100,00	100,00
Return	Responsiveness	RS. 3.136 Transfer Defective Product Cycle Time	0,00	1,00	0,00	0,00
	Agility	AG. 2.3 Upside Deliver Return Flexibility	0,00	1,00	0,00	0,00

Source: Data Processing Results, 2024

Different from the other two companies, PT C make process has a score of 50, which is considered quite good performance in several aspects, but still requires more attention or improvement in certain areas. From the image, the total score value for each performance attribute is obtained which is then used as a reference for measuring supply chain performance. These values are as follows:

1. Plans

In the plan process, the reliability attribute has a value of 93.76 and responsiveness of 80.00.

2. Source

In the source process, the reliability attribute has a value of 100.00 and responsiveness of 100.00.

3. Make

In the make process, the reliability attribute has a value of 99.97; responsiveness was 50.00 and asset management was 91.21.

4. Deliver

In the deliver process, the reliability attribute has a value of 100.00 and a cost of 100.00.

5. Return

In the return process, the responsiveness attribute has a value of 0.00 and agility of 0.00.

Figure 4 : Measurement Supply Chain Performance Process PT A

PROSES	ATRIBUT	SKOR	BOBOT	SKOR X BOBOT	SKOR LEVEL 1	BOBOT LEVEL 1	FINAL SKOR
Plan	*Realibility*	86,96	0,50	43,48	83,48	0,25	20,87
	Responsiveness	80,00	0,50	40,00			
Source	*Realibility*	100,00	0,50	50,00	100,00	0,25	25,00
	Responsiveness	100,00	0,50	50,00			
Make	*Realibility*	99,67	0,33	33,22	68,66	0,25	17,17
	Responsiveness	30,00	0,33	10,00			
	Assets Management	76,31	0,33	25,44			
Deliver	*Reliability*	100,00	0,50	50,00	100,00	0,25	25,00
	Cost	100,00	0,50	50,00			
Return	*Responsiveness*	0,00	0,50	0,00	0,00	0,00	0,00
	Agility	0,00	0,50	0,00			

Source: Data Processing Results, 2024

Figure 5: Measurement Supply Chain Performance Process PT B

PROSES	ATRIBUT	SKOR	BOBOT	SKOR X BOBOT	SKOR LEVEL 1	BOBOT LEVEL 1	FINAL SKOR
Plan	*Realibility*	94,65	0,50	47,32	87,32	0,25	21,83
	Responsiveness	80,00	0,50	40,00			
Source	*Realibility*	100,00	0,50	50,00	100,00	0,25	25,00
	Responsiveness	100,00	0,50	50,00			
Make	*Realibility*	99,94	0,33	33,31	71,97	0,25	17,99
	Responsiveness	30,00	0,33	10,00			
	Assets Management	85,97	0,33	28,66			
Deliver	*Reliability*	100,00	0,50	50,00	100,00	0,25	25,00
	Cost	100,00	0,50	50,00			
Return	*Responsiveness*	0,00	0,50	0,00	0,00	0,00	0,00
	Agility	0,00	0,50	0,00			

Source: Data Processing Results, 2024

Figure 6: Measurement Supply Chain Performance Process PT C

PROSES	ATRIBUT	SKOR	BOBOT	SKOR X BOBOT	SKOR LEVEL 1	BOBOT LEVEL 1	FINAL SKOR
Plan	*Realibility*	93,76	0,50	46,88	86,88	0,25	21,72
	Responsiveness	80,00	0,50	40,00			
Source	*Realibility*	100,00	0,50	50,00	100,00	0,25	25,00
	Responsiveness	100,00	0,50	50,00			
Make	*Realibility*	99,97	0,33	33,32	80,39	0,25	20,10
	Responsiveness	50,00	0,33	16,67			
	Assets Management	91,21	0,33	30,40			
Deliver	*Reliability*	100,00	0,50	50,00	100,00	0,25	25,00
	Cost	100,00	0,50	50,00			
Return	*Responsiveness*	0,00	0,50	0,00	0,00	0,00	0,00
	Agility	0,00	0,50	0,00			

Source: Data Processing Results, 2024

From the three pictures presented regarding the SCOR value of each company, the results obtained are as follows:

1. Plans

   Performance measurement in the plan process at PT A, PT B, PT C has a final value of 20.87; 21.83; 21.72. Weighting uses measurement attributes according to the actual conditions that occur in the field. The paving block industry PT A, PT B, PT C has methods related to calculating production planning systems, orders or forecasting based on order data that was entered in the previous month. Therefore, the reliability value in the plan process is close to very good because the actual demand each month can still be met because the raw materials available are safe. By forecasting the production process based on calculations, it affects the time required for each subsequent process, which causes delays to occur in the field.

2. Source

   Performance measurement in the source process at PT A, PT B, PT C has a final value of 25.00. Weighting uses measurement attributes according to the actual conditions that occur in the field. Paving block industry in X area has never experienced any problems in procuring raw materials. The two attributes used have very good value because in fact there have never been problems in procuring raw materials.

3. Make

   The performance measurement of the make process at PT A, PT B, PT C has a final value of 17.17; 17.99; 20.10. Weighting uses measurement attributes according to the actual conditions that occur in the field. If we look at the reliability value, this industry has great value in its ability to carry out tasks as expected, as well as in its asset management attributes, there are no problems in utilizing assets efficiently. The paving block industry in its actual state regarding responsiveness in the field also found no problems. However, PT C is better than PT A and PT B which were studied because of the additional ingredients that make production in this industry faster and this process can trigger the product to be more expensive. In the manufacturing process, of course consumers are more interested in industries that are faster in the production process.

4. Deliver

   Performance measurement in the deliver process has a final value of 25.00. The performance attributes used in the deliver process are reliability and cost with a score for each process of 100.00; 100.00. Weighting uses measurement attributes according to the actual conditions that occur in the field. The entire paving block industry has a very good score of 100%, it is said to be very good because in the

process there were no errors in delivery.

5. Return

   Performance measurement in the return process has a final value of 0. Weighting uses measurement attributes according to the actual conditions that occur in the field. The paving block industry has a value of 0 because there is no measurable value due to the company not receiving any returns.

Of the three companies, the company that has the best performance is PT C when compared to the other two companies. PT C is the company that has the best performance value, especially in the making process because it can produce production that is very different from other companies.

Efforts to Improve Supply Chain Performance using the Failure Mode and Effect Analysis (FMEA) Technique in the Paving Block Industry in X Area

After calculating supply chain performance using the SCOR method, the next step is to assess supply chain performance. Performance appraisals are assessed based on the lowest SCOR value with problems that may occur from the process. From the measurement results using the SCOR method, it can be seen that the supply chain performance that has a low value is in the make process, this is in line with the statement from each owner that the problems that often occur are in the production process. FMEA is a technique used to determine how to prevent failure of a process.

The first step in analyzing a failure using FMEA is to identify the types of failure (failure mode), then the next step is to identify the consequences of the failure (effect of failure), then identify the causes of failure that occur in the ongoing process (cause of failure). FMEA can be calculated using risk priority numbers (RPN).

In the making process which consists of mixing, molding and drying, the problem that often occurs is during the drying process where the product is often still wet when it is sent. The risk ranking in this research is to identify failures that occur in the product drying process.

Table 2 : FMEA Tables

PROCESS NAME	*FAILURE MODE*	*EFFECT OF FAILURE*	*CAUSE OF FAILURE*	S	O	D	RPN
Product drying process	Paving block are still wet	Paving blocks are sent in a condition that is not completely dry.	Bad weather causes delays in the drying process.	5	4	6	120

Source: Data Processing Results, 2024

From the failure identification results in the table, it can be seen that during the last 3 months bad weather has the potential to cause product failure in the paving block

industry in X area, although the average finished product can still be adjusted to the average drying days as usual, however Bad weather such as rain has the potential to hinder product drying. Proposed improvements that can be made to prevent failure include the need to add materials or liquids that can make the product dry more quickly so that when bad weather comes, this risk does not become high. Allow additional time at the time of delivery agreement to avoid the product still being wet during bad weather. Lastly, the improvement effort that needs to be made by the three paving block industries is to record the entire product supply chain as monthly management, even though in the actual situation there are no problems in the plan, source, deliver and return processes, this is very good for evaluation and control. For owners, it would be good if every company had good data on every running process.

5. CONCLUSION

Conlusions in research is the performance of supply chain in the paving block industry in the X area using the SCOR method by measuring the five processes means that source and delivery are processes that perform very well, while the process that performs the worst is make. After measuring using the SCOR method, this value provides the conclusion for the author that of the three research objects, PT C is the company that has the best performance value, especially in the making process because it can produce production that is very different from other companies, this company has mixed materials. specifically, which makes drying faster so that owners are brave enough to take orders with large quantities but the processing time is the same as other paving block industries which are the object of the author's research.

Meanwhile, the conclusion of the improvement efforts that have been measured using FMEA is that the make process is a supply chain process that has been validated as having problems in the paving block industry. One of the problems that is often faced is the drying process which can be hampered by bad weather. To prevent this failure, the author proposes improvements in the form of adding materials or liquids that can make the product dry more quickly so that if bad weather occurs this risk does not become as high.

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