Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE) Vol. 9. No. 1 (2026)
e-ISSN: 2621-606X Page: 838-849

OPTIMIZING THE GOODS DISTRIBUTION PROCESS WITH A LEAN DISTRIBUTION APPROACH CV ANUGERAH HASIL ABADI

Achmad Gufron[1]
Universitas Pembangunan Nasional "Veteran" Jawa Timur, Surabaya, Indonesia
21032010022@student.upnjatim.ac.id

Dwi Sukma Donoriyanto[2]
Universitas Pembangunan Nasional "Veteran" Jawa Timur, Surabaya, Indonesia
dwisukama.ti@upnjatim.ac.id

Abstract

In the distribution industry, operational efficiency is essential to improve competitiveness and customer satisfaction. This study aims to optimize the distribution process of goods at CV Anugerah Hasil Abadi by implementing the Lean Distribution approach. The Value Stream Mapping (VSM) method is used to identify major waste in the distribution process, while the 5 Whys method is used to find the causes. The results of the study showed five activities with the highest time waste, namely storing goods in the warehouse (1440 minutes), loading goods into trucks (180 minutes), the process of unloading goods from trucks (180 minutes), checking goods according to sales orders (34 minutes), and the manager's signature process (30 minutes). The implementation of improvement solutions, such as the use of a warehouse management system (WMS), investment in loading and unloading equipment, and process digitalization, succeeded in reducing distribution time by 720 minutes, from 4260 minutes to 3540 minutes. In addition, the Process Cycle Efficiency (PCE) increased from 49.91% to 60.06%. These results prove that the implementation of Lean Distribution can improve operational efficiency and reduce waste in the distribution process.

Keywords: Lean Distribution, Value Stream Mapping, 5 Whys, Waste, Operational Efficiency

INTRODUCTION

The increasing population growth in Indonesia has significantly driven infrastructure development, particularly in the business sector (Shobur, 2021). In a highly competitive environment, companies must effectively compete and be prepared to face various risks, especially in providing optimal customer service (Firnando, 2021). One crucial aspect of business operations is the distribution process, which directly impacts the efficiency of product delivery from producers to customers (Baharudin, 2021). Efficient distribution contributes to improving operational services, reducing distribution time, and minimizing inventory in warehouses (Arianto, 2020). Furthermore, efficient distribution enhances operational effectiveness, which is key to achieving a competitive advantage (Zylstra, 2016; Febrianty et al., 2022).

CV Anugerah Hasil Abadi is a private company engaged in the distribution of household furniture made of plastic and iron. Established since March 2024, CV Anugerah Hasil Abadi currently has a head office in the city of Surabaya. The sales system in the company uses purchase orders, namely orders made by customers through PO documents containing details of orders for approval of the purchase of goods. In the process of shipping goods, the company relies on shipping services through transportation modes such as land and sea. In the process of distributing goods, the company strives to ensure that products reach customers on time, in good condition, and in an efficient time. The company carries out the process of shipping goods almost every day of the week, namely on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, except on holidays. The following is customer order data in January every day.

Figure 1
Customer Order Data for January

The graph shows customer order data that occurred during January 2025 at CV Anugerah Hasil Abadi. Based on these data, it can be seen that customer orders in the company experienced unpredictable fluctuations. This resulted in a longer lead time for shipping goods than usual due to limited transportation and a lack of helpers on duty to load the goods. So that the shipping process takes up to 4260 minutes or 71 hours. In addition, this incident also occurs from several activities that require a long time, such as a long shipping process, inefficiency in stock management, availability of transportation modes, with the process of moving goods to scheduling shipments being the main obstacles to achieving competitive advantage. This condition not only affects the length of the shipping

process but also reduces customer satisfaction levels. Therefore, strategic steps are needed to optimize the distribution process in this company.

In the context of distribution management, the lean distribution approach has proven to be an effective method for optimizing the distribution process by identifying and eliminating waste in distribution activities (Hambajawa, 2020). The basic principle of lean is to increase the added value of goods or services to provide value to customers in all business process flows (Ibrahim, 2020). Lean distribution focuses on identifying and eliminating activities that do not provide added value (Ariffien et al., 2019). Waste such as waiting time, inefficient transportation, and unnecessary inventory are some of the main focuses that can be improved through this approach. By implementing lean principles, companies can increase flexibility and responsiveness to customer needs (Rakhmasari & Dharmayanti, 2023). As with previous research conducted by Paillin et al., (2020), it shows that the implementation of lean distribution in distribution companies can reduce waiting time by up to 42% through waste analysis and implementation of data-based solutions.

In addition, Demilza et al., (2024) explained that lean principles not only increase efficiency but also create greater added value for customers by reducing irrelevant processes and saving resources. In the operations of CV Anugerah Hasil Abadi, the distribution process plays a strategic role because home furnishing products must meet the needs of customers in various regions. With increasingly fierce competition in the market, distribution optimization is very important to maintain the company's competitiveness. Therefore, this study focuses on the application of the lean distribution approach to identify major waste in the distribution process and provide solutions in the form of proposals that can significantly improve operational efficiency and the quality of distribution services at CV Anugerah Hasil Abadi. This study is also expected to provide practical contributions to the company and become an academic reference for the development of the concept of goods distribution efficiency in the future.

REVIEW OF LITERATURE

The distribution process plays a critical role in supply chain management, directly impacting operational efficiency and customer satisfaction, with lean distribution emerging as a key strategy to minimize waste and streamline logistics (Demilza et al., 2024). Lean principles focus on reducing non-value-added activities, optimizing lead time, and improving overall efficiency by eliminating unnecessary transportation, overproduction, and excessive inventory (Pailin et al., 2020).

The application of Value Stream Mapping (VSM) and Process Activity Mapping (PAM) allows organizations to visualize inefficiencies and propose targeted improvements (Rakhmasari & Dharmayanti, 2023). Studies have shown that implementing lean distribution can significantly reduce processing time, lower costs, and enhance service reliability (Ariffien et al., 2019). Furthermore, techniques such as the 5 Why method help identify root causes of inefficiencies, ensuring sustainable process optimization. By integrating these methodologies, companies can enhance their distribution networks, reduce waste, and achieve a competitive advantage in the market (Hambajawa et al., 2020).

RESEARCH METHOD

This final project research was conducted at CV Anugerah Hasil Abadi, which operates at Jl. Kalijudan Taruna 1 No. 23A, Kel. Kalijudan, Kec. Mulyorejo, 60144, Surabaya, East Java, Indonesia. The research implementation period was carried out in January 2025 until the required data was fulfilled. In this study, it is necessary to identify the research variables. The variables related to this study are the dependent variable and the independent variable. The dependent variable is the variable that is influenced or the variable that is the result of the independent variable. In this study, the dependent variable is the level of waste in the distribution process of CV Anugerah Hasil Abadi goods. The independent variable is the variable that affects the change in the value of the dependent variable. In this study, the independent variables are waste of defect, waste of overproduction, waste of waiting, waste of transportation, waste of inventory, waste of motion, waste of excess processing. Data analysis is carried out through several stages, namely data collection, data reduction, data presentation, providing recommendations for improvement, and drawing conclusions. The first stage is data collection, which is carried out using two methods, namely observation and interviews. After the data has been collected in sufficient quantity, the data processing process is carried out. The collected data is processed using the Value Stream Mapping (VSM) and Process Activity Mapping (PAM) methods to identify the level of waste so that the waste weight is obtained. The result of data processing is to identify activities that experience waste. Furthermore, a search for the cause of waste is carried out on activities that do not add value, using the root cause analysis method, namely 5 Why. Based on the results of identifying the causes of waste using 5 why, solutions or proposed improvements are submitted to increase effectiveness and productivity.

RESULTS AND DISCUSSION

Table 1
Shipping Process Activity Time Data

Code	Activities	Category Activity			Time (minutes)
		VA	NNVA	NVA	
	Marketing accept order				
MO1	*Marketing* accept order from customer		P		1
MO2	*Marketing* do order data recording with make *sales order*		P		8
MO3	*Marketing* give *sales order* to admin		P		1
	Admin did order check				
PO1	Admin checks *sales orders* from *marketing*		P		4
PO2	Admin confirms booking		P		1
PO3	Waiting to be signed by *the manager*		P		30
PO4	Admin input *sales order* to in *accurate system*		P		6
	Warehouse staff get *sales order*				
SO1	Warehouse staff checks goods according to *sales orders*		P		34
SO2	Warehouse staff confirms the availability of goods to be delivered to customers.		P		2
SO3	Wait confirmation from customer			P	20
SO4	Admin made sign accept		P		3
SO5	Warehouse staff gives *sales order* to *helper* to pick up goods		P		1
	Storage process goods				
PB1	*Helper* picks up items according to customer order data		P		28
PB2	*Helper* moves goods to the destination area grouping		P		7

Code	Activities	Category Activity			Time (minutes)
		VA	NNVA	NVA	
PB3	Storage goods in warehouse		P		1440
Preparation vehicle load					
KM1	Warehouse staff determines amount the vehicle that will used		P		8
KM2	Warehouse staff contacts the transportation mode		P		2
KM3	Truck transportation mode arrives at the storage warehouse		P		1
KM4	Checking the condition of the mode of transportation in the form of trucks			P	19
Loading process goods					
PM1	Warehouse staff creates a waybill for arranging the loading of goods.		P		14
PM2	Loading goods into the truck		P		180
PM3	The driver returns the waybill to the warehouse staff.			P	1
PM4	Warehouse staff make invoice		P		18
PM5	Admin rechecks the invoice for price, order and discount conformity.			P	7
PM6	Warehouse staff hands over shipping documents and invoice to driver.		P		1
Delivery goods to address objective					
BK1	Departure truck to harbor	P			26
BK2	Wait departure boat		P		15
BK3	Departure boat going to harbor objective	P			1980
BK4	Wait queue go out boat		P		18
BK5	Truck journey to destination address	P			120
Item arrived at destination address					
BD1	Truck arrives at destination address		P		1
BD2	Driver provides goods data and invoices to customers		P		1
BD3	Customers check invoices according to goods data			P	3
BD4	*Helper* unloads goods from truck		P		180
BD5	Customers check that the goods match the invoice		P		29
BD6	Customers provide stamps and signatures for receipt of goods invoices.		P		2
BD7	Driver sends goods receipt invoice to warehouse staff		P		2
Billing payment to customer					
PP1	Warehouse staff *uploads* goods receipt invoices to gdrive for billing by admin		P		1
PP2	Admin checks the receipt invoice for goods		P		3
PP3	Admin contact customer		P		8
PP4	Admin provides information bill		P		2
PP5	Customer do settlement bill		P		6
PP6	Warehouse staff creates invoice payment note		P		21
PP7	Admin did checking payment note goods			P	3
PP8	Admin saves the original settlement note		P		1
PP9	Admin sends *online payment note* to customer		P		1
Total		**3**	**37**	**6**	**4260**

Description: VA: *Value Added*; NVA: *Non-Value Added;* NNVA: *Necessary Non Value Added*

Current mapping value stream Mapping is done by analyzing the initial goods distribution process and analyzing goods distribution information with the stages of Distribution Process Analysis. Initial Goods this stage aims to identify the flow of the goods distribution process at CV Anugerah Hasil Abadi Surabaya by mapping *Current Value Stream Mapping* (CVSM). The following is an initial description of CVSM, which describes the goods distribution process at CV Anugerah Hasil Abadi Surabaya.

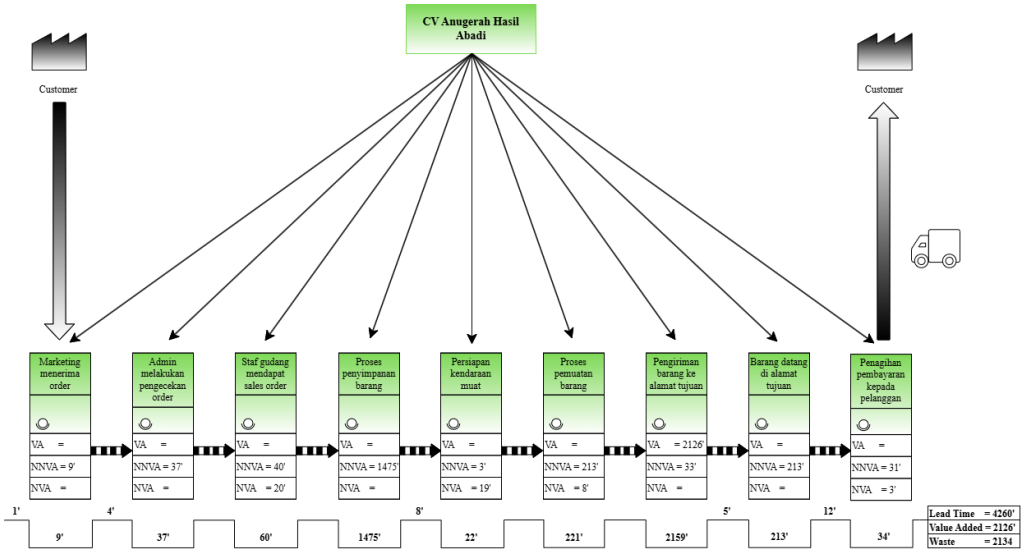

Figure 2

Current Value Stream Mapping Distribution Process of Goods CV Anugerah Hasil Abadi

Current mapping *The* initial *Value Stream Mapping in Figure 1 shows that marketing* receives orders for 9 minutes with a waiting time of 1 minute, admin checks orders for 37 minutes with a waiting time of 4 minutes, warehouse staff receives *sales orders* (SO) for 60 minutes, the goods storage process is carried out for 1475 minutes, vehicle preparation for loading for 22 minutes with a waiting time of 8 minutes, the goods loading process for 221 minutes, delivery of goods to the destination address for 2159 minutes, goods at the destination address for 213 minutes with a waiting time of 5 minutes, and billing payments to customers for 34 minutes with a waiting time of 12 minutes. So that the calculation of *the Process Cycle Efficiency* (PCE) value is as follows:

$$PCE = \frac{VA}{\sum t} \times 100\%$$

$$PCE = \frac{2126}{4260} \times 100\% = 49{,}91\%$$

Table 2
Amount of Time for Each Type of Activity

No	Activity Type	Amount Activity	Percentage
1	*Operation*	17	36.96%
2	*Transportation*	15	32.61%
3	*Inspection*	8	17.39%
4	*Delay*	4	8.70%
5	*Storage*	2	4.34%
Amount		46	100%

Table 2 explains that the amount of time for the *operation* activity type is 17 activities, with an activity percentage of 36.96%. The *Transportation activity type* is 15 activities, with an activity percentage of 32.61%. The *Inspection activity type* is 8 activities, with an activity percentage of 17.39%. The *Delay activity type* is 4 activities, with an activity percentage of 8.70%. And the *Storage activity type* is 2 activities, with an activity percentage of 4.34%.

The data processing carried out obtained the distribution process activities of goods at CV Anugerah Hasil Abadi which were identified based on the mapping of process activities that had been prepared, at the *waste identification stage.* The ranking of waste obtained the five highest wastes, namely storing goods in the warehouse (PB3) with a total time of 1440 minutes, loading goods into trucks (PM2) with a total time of 180 minutes, *helpers* unloading goods from trucks (BD4) with a total time of 180 minutes, warehouse staff checking goods according to *sales orders* (SO1) with a total time of 34 minutes and waiting for signatures by *managers* (PO3) with a total time of 30 minutes. Identification of the cause of the problem was carried out through *brainstorming* with the company using *Root Cause Analysis* namely 5 *whys*. The causes of each waste problem are shown in the following table:

Table 3
5 *Reasons Why* Waste Occurs

Activity	*Why 1*	*Why 2*	*Why 3*	*Why 4*	*Why 5*
Storage goods in warehouse	Because the goods were not immediately sent to the customer	Due to delays in transportation arrangements	Because communication with the transportation party is not effective	Because of the system coordination Still done manually	Because a digital logistics management system has not been implemented
Loading goods into the truck	Because the number of items to be loaded is very large	Because the goods are collected before being sent in large quantities	Because there is no flexible delivery schedule	Because the delivery system still uses the *batch method*	Because of the company Not yet apply system delivery based on request customer
Helper unloads goods from truck	Because the items have to be moved one by one manually	Because there are no tools such as *forklifts*	Because the company has not invested in loading and unloading equipment	Because it is considered an unnecessary additional cost.	Because not yet done analysis efficiency that shows profit from investment the
Warehouse staff checks goods according to *sales orders*	Because the process is carried out manually	Because there is no *barcode* or RFID system for fast verification	Because of the company Still depend on manual recording	Because the digitalization system has not been implemented comprehensively	Due to lack of investment and training For staff warehouse
Waiting to be signed by *the manager*	Because approval is still pending done manually	Because there is no digital system for automatic authorization yet	Because management is still used to manual processes	Because it does not There is policy For digitalization of *approval* process	Because not yet There is initiative For increase efficiency stage This

Table 4
Proposal Repair

Activity	Proposal Repair
Storage goods in warehouse	*Warehouse* Implementation *Management System* (WMS) for storage optimization.
	Use a digital *tracking system* for a more accurate delivery schedule.
Loading goods into the truck	Implement the *Just in Time* (JIT) method to reduce the accumulation of goods before shipping.

Activity	Proposal Repair
	Create a more flexible delivery schedule according to customer requests.
Helper unloads goods from truck	Investing in *forklifts* , *conveyors* , or *pallets jack* to speed up *unloading* of goods.
	Cost and efficiency analysis of loading and unloading equipment for investment justification.
Warehouse staff checks goods according to *sales orders*	*Barcode* implementation *scanner* or RFID to speed up the goods verification process.
	Staff training in the use of digital technology for stock management.
Waiting to be signed by *the manager*	Implement a digital *approval system* so that signatures can be done automatically.
	Use ERP or *workflow software automation* to accelerate approvals.

The next stage is the *Future Value Mapping mapping* which is carried out by analyzing the flow of the product warehousing process. This stage aims to identify the flow of the goods distribution process at CV Anugerah Hasil Abadi Surabaya after being given a proposal for improvement and simplification of *the Process Activities Mapping* by mapping *Future Value Stream Mapping* (FVSM). The following is an initial description of FVSM which describes the goods distribution process at CV Anugerah Hasil Abadi Surabaya.

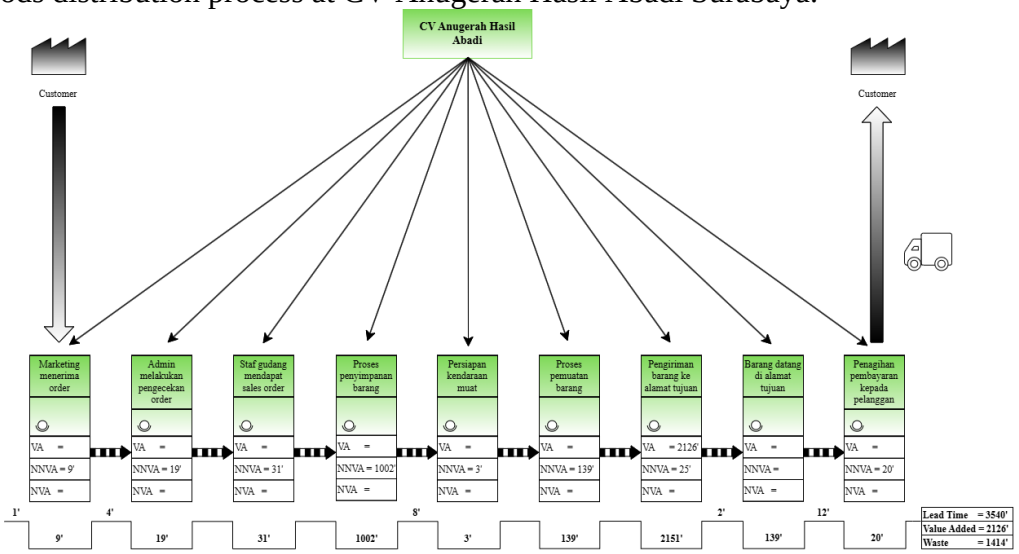

Figure 3
***Future Value Stream Mapping* Distribution Process of Goods CV Anugerah Hasil Abadi**

Future Value Stream Mapping mapping in Figure 2, the total *lead The time* required for the entire distribution process of goods at CV Anugerah Hasil Abadi reaches 3540 minutes or equivalent to 59 hours. Meanwhile, for *the value added* is obtained as much as 2126 minutes with a waste of 1414 minutes. So, the calculation of *the Process Cycle Efficiency* (PCE) value is as follows:

$$PCE = \frac{VA}{\sum t} \times 100\%$$

$$PCE = \frac{2126}{3540} \times 100\% = 60{,}06\%$$

Based on mark *Process Cycle Efficiency* (PCE), obtained results by 60.06%. This is show that flow distribution goods at CV Anugerah Hasil Abadi are experiencing

improvement from previously 10.15% of *Process Cycle Efficiency* (PCE) which was initially 49.91% to 60.06%.

From the results of the waste ranking that has been carried out, there are five wasteful activities with the highest time, namely:

1. Storage of goods in the warehouse (PB3) with a time of 1440 minutes.
2. Loading goods into trucks (PM2) with a time of 180 minutes.
3. *Helper* unloads goods from truck (BD4) within 180 minutes.
4. Warehouse staff checks goods according to *sales order* (SO1) within 34 minutes.
5. Waiting to be signed by *the manager* (PO3) for 30 minutes.

a new *Process Activity Mapping* (PAM) and *Value Stream Mapping (VSM)* will be obtained. The following is a comparison of the initial *Process Activity Mapping* (PAM) with the new *Process Activity Mapping* (PAM):

a. Comparison of the number of activity categories

Table 5
Comparison of Initial and Proposed Number of PAM Activity Categories

No	Category Activity	Amount Initial Activities	Initial Percentage	Amount Activity Proposal	Percentage Proposal
1	*Value Added* (VA)	3	6.52%	3	7.50%
2	*Necessary Value Added* (NNVA)	37	80.43%	37	92.50%
3	*Non Value Added* (NVA)	6	13.05%	0	0%
Amount		46	100%	40	100%

Based on the comparison of the number of activity categories, there was a reduction of 6 activities from the original 46 to 40 activities. Value activity category Added (VA) did not experience any change in the number, namely 3 activities with a percentage that increased from 6.52% to 7.50%. The activity category Naccessary Non-Value Added (NNVA) remained the same, but the percentage increased from 80.43% to 92.50%. Meanwhile, the number of Non Value activity categories Added (NVA) experienced a reduction from 6 activities to 0, so that the percentage fell from 13.02% to 0%.

b. Comparison of activity category times

Table 6
Comparison of Initial and Proposed PAM Activity Category Time

No	Category Activity	Initial Activity Time	Initial Percentage	Activity Time Proposal	Percentage Proposal
1	*Value Added* (VA)	2126	49.91%	2126	60.06%
2	*Necessary Value Added* (NNVA)	2081	48.85%	1414	39.94%
3	*Non Value Added* (NVA)	53	1.24%	0	0%
Amount		4260	100%	3540	100%

From the results of the comparison of activity category times, there was a reduction in distribution or *lead time. time* as much as 720 minutes or equivalent to 12 hours from the original 4260 minutes to 3540 minutes. The *Value Added (VA)* activity category did not experience a change in time, namely 2126 minutes with a percentage that increased from 49.91% to 60.06%. The *Naccessary* activity category *Non Value Added* (NNVA) there was a change in time from 2081 minutes to 1414 minutes with a percentage decrease from 48.85% to 39.94%. Meanwhile, the time category of *Non Value Added* (NVA) activities decreased from 53 minutes to 0 minutes, so that the percentage decreased from 1.24% to 0%.

c. Comparison of activity types

Table 7
Comparison of Initial and Proposed PAM Activity Types

No	Activity Type	Amount Initial Activities	Initial Percentage	Amount Activity Proposal	Percentage Proposal
1	*Operation*	17	36.96%	17	42.50%
2	*Transportation*	15	32.61%	14	35.00%
3	*Inspection*	8	17.39%	4	10.00%
4	*Delay*	4	8.70%	3	7.50%
5	*Storage*	2	4.34%	2	5.00%
Amount		46	100%	40	100%

Based on the comparison of the number of types of activities, there was a reduction of 6 activities from the original 46 to 40 activities. The type of *operation activity* did not experience a change in number, namely 17 activities with a percentage that increased from 36.96% to 42.50%. The type of *transportation activity* experienced a reduction from 15 activities to 14 activities with a percentage that increased from 32.61% to 35.00%. The type of *inspection activity* experienced a change in number from 8 activities to 4 activities with a percentage that increased from 17.39% to 10.00%. The type of *delay activity* experienced a reduction from 4 activities to 3 activities with a percentage that decreased from 8.70% to 7.50%. Meanwhile, the number of types of *storage activities* remained the same, namely 2 activities with a percentage that increased from 4.34% to 5.00%.

d. Comparison of activity type times

Table 8
Comparison of Initial and Proposed PAM Activity Type Time

No	Activity Type	Initial Activity Time	Initial Percentage	Activity Time Proposal	Percentage Proposal
1	*Operation*	104	2.44%	76	2.14%
2	*Transportation*	2530	59.39%	2406	67.97%
3	*Inspection*	102	2.39%	47	1.33%
4	*Delay*	83	1.95%	40	1.13%
5	*Storage*	1441	33.83%	971	27.43%
Amount		4260	100%	3540	100%

Based on the comparison of the number of types of activities, there is a reduction in distribution time or *lead time. time* as much as 720 minutes from the original 4260 minutes to 3540 minutes. Type of *operation activity* experienced a change in time from 104 minutes to 76 minutes with a percentage decrease from 2.44% to 2.14%. The *transportation activity type* experienced a reduction from 2530 minutes to 2406 minutes with a percentage increase from 59.39% to 67.97%. The *inspection* activity type experienced a change in time from 102 minutes to 47 minutes with a percentage decrease from 2.39% to 1.33%. The *delay activity type* experienced a reduction in time from 83 minutes to 40 minutes with a percentage decrease from 1.95% to 1.13%. Meanwhile, the *storage activity type time* experienced a reduction from 1441 minutes to 971 minutes, so that the percentage decreased from 33.83% to 27.43%.

CONCLUSION

Based on the results of the analysis that has been carried out regarding the goods distribution process at CV Anugerah Hasil Abadi, it was found that the distribution process

experienced several types of waste, including: waste of defects and waste of overproduction of 0%, waste of waiting of 21.06%. waste of transportation by 5.26%, waste of Inventory is 5.26%, waste of motion by 15.79%, and waste of excess processing 52.63%. In the ranking of waste activities based on time, there are five waste activities with the highest time, namely PB3 with a time of 1440 minutes, PM2 with a time of 180 minutes, BD4 with a time of 180 minutes, SO1 with a time of 34 minutes, and PO3 with a time of 30 minutes. Reduction of distribution time or lead time time of 720 minutes from 4260 minutes to 3540 minutes shows an increase in efficiency, where the Non Value category Added (NVA) was successfully eliminated, while Necessary Non Value Added (NNVA) experienced a reduction in time from 2081 minutes to 1414 minutes.

Value Approach Stream Mapping (VSM) and Process Activities Mapping (PAM) proved effective in identifying major waste, while the 5 Why method helped find the root cause of the problem, particularly related to inefficient waiting time and transportation. The implementation of improvements resulted in significant efficiency improvements, marked by an increase in the proportion of process cycle efficiency (PCE) of 10.15% which was initially from 49.91% to 60.06%. In addition, the reduction of non-value added activities or Non Value Added (NVA) has a positive impact on the smoothness and effectiveness of CV Anugerah Hasil Abadi's goods distribution flow, which ultimately increases customer satisfaction.

REFERENCES

Arianto, B. (2020). Sistem Distribusi, Logistik dan Supply Chain dengan Metode Lean Distribution. *Jurnal Mitra Manajemen*, 4(1), 25–32. https://doi.org/10.35968/jmm.v4i1.579

Ariffien, A., Adriant, I., & Sinuhaji, Y. B. (2019). Optimasi Proses Distribusi Sayuran Segar Dengan Pendekatan Lean Distribution Pada Pt. Bimandiri Agro Sedaya. Jurnal Manajemen Logistik Dan Transportasi, 5(2), 99–109. https://juna.ulbi.ac.id/index.php/stimlog/article/view/139

Baharudin, I., Purwanto, A. J., & Fauzi, M. (2021). Analisis Pemborosan Menggunakan "9 Waste" Pada Proses Produksi Pt Abc. Jurnal Ilmiah Teknologi Infomasi Terapan, 8(1), 187–192. https://doi.org/10.33197/jitter.vol8.iss1.2021.745

Demilza, K., K. (2024). Pendekatan Konsep Lean untuk Mengurangi Lead Time dan Waste Transportasi: Studi Kasus pada PT. Eteris Prima Wiyasa. Indonesian Research Journal on Education. Vol. 4(4), 1953-1960. https://doi.org/10.31004/irje.v4i4.1583

Febrianty, T. B., Hermansyah, F. A., Syafiin, I. A. S., & Fauzi, M. (2022). Identifikasi Jenis Pemborosan Yang Terjadi Pada Pt.Pqr Dengan Menggunakan Metode 8 Waste. Jurnal Ilmiah Keilmuan Teknik dan Manajemen Industri, 2(10), 94–101. https://doi.org/10.46306/tgc.v2i1.28

Firnando, O., Novita, D., & Ahluwalia, L. (2021). Analisis Pengaruh Saluran Distribusi dan Promosi pada Keputusan Pembelian Produk (Survey pada Konsumen PT Inti Bharu Mas Lampung). Journal Strategy of Management and Accounting Through Research and Technology (SMART), 1(1), 31-37. https://doi.org/10.33365/smart.v1i1.1111

Hambajawa, D., L., Fourry, H., & Kiswandono. (2020). Implementasi Lean Distribution untuk Mengurangi Lead Time Pengiriman Semen Holcim pada Distribusi Jalur Darat

di PT. Bumi Pembangunan Pertiwi Malang. Jurnal Valtech (Jurnal Mahasiswa Teknik Industri), 3(2), 148- 152. https://doi.org/10.36040/valtech.v3i2.2744

Ibrahim, N. G. (2020). Evaluasi Pergudangan dengan Pendekatan Lean Warehousing Dan Linear Programming (STUDI KASUS PT. X). In Skripsi. Institut Teknologi Sepuluh Nopember.

Paillin, D. B., Camerling, B. J., & Nasarany, C. (2020). Lean distribution to minimize waste of time in the stripping process at PT. Pelabuhan Indonesia IV Ambon Branch. Journal of Engineering and Applied Technology, 1(2), 74-84. http://dx.doi.org/10.21831/jeatech.v1i2.35091

Rakhmasari, A. A., & Dharmayanti, I. (2023). Integrasi Value Stream Mapping dengan Simulasi Kejadian Diskrit: Studi Kasus Lean Distribution. Jurnal INTECH Teknik Industri Universitas Serang Raya, 9(2), 117–126. https://doi.org/10.30656/intech.v9i2.6063

Shobur, M., Alfatiyah, R., Dahniar, T., & Supriyadi, E. (2021). Sistem Produksi Lean (pp. 1–263). UNPAM PRESS. www.unpam.ac.id

Siregar, T. H., Harahap, I., & Ridwan, M. (2025). The Role of Islamic Financial Institutions: Maintaining Market Integration and Preventing Distortion. *Danadyaksa: Post Modern Economy Journal*, *2*(2), 154–166. https://doi.org/10.69965/danadyaksa.v2i2.135

Toha, Mohamad & Habibah, N.J. (2023). MSME Empowerment and Development Program to Increase Consumer Satisfaction. *Sahwahita: Community Engagement Journal*, *1*(1), 26-39. https://e-journal.bustanul-ulum.id/index.php/Sahwahita/article/view/24

Zinah, F., Rohmah, N., & Kunaifi``, A. (2024). Development of the Hajj Savings Mechanism with the Wadi'ah Agreement on BSI Surabaya Basuki Rahmat. *Danadyaksa: Post Modern Economy Journal*, *2*(1), 48–57. https://doi.org/10.69965/danadyaksa.v2i1.89

Zylstra, K. D. (2016). Lean distribution. In Jon Wiley & Sons, Inc