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MAXIMIZING THE TIMELINESS OF DELIVERY ORDERS IN THE INDONESIAN PLASTIC MANUFACTURING INDUSTRY

Theresye Yoanyta Octora[1], Wildan[2], Anggit Dimas Suseno[3], Reza Rudi Revanza[4]
[1,2,3,4] Faculty of Management and Business, Institut Transportasi dan Logistik Trisakti, Jakarta, Indonesia
Corresponding author: anggitdimassuseno123@gmail.com

Abstract: This study aims to maximize the timely delivery of orders in the plastic manufacturing industry in Indonesia by applying the Causal qualitative method, this study uses fishbone analysis with data triangulation, namely data collection through interviews. This analysis identifies problems and determines the cause of the problem. Based on the research conducted, it was found that the timeliness of delivery is influenced by internal factors, including production processes, supply chain management, and production capacity, as well as external factors such as market conditions, transportation, and industry regulations. Policy strategies to minimize delivery delays include time management, production planning, production machine limitations, real-time tracking of goods, effective team communication, production capacity planning, real-time inventory updates, and employee training. This research can provide valuable insights for the plastics manufacturing industry in Indonesia to identify weaknesses in production and delivery processes and implement policy strategies to improve operational efficiency in production and order delivery.

Keywords: *Order Delivery, Manufacturing Industry, Qualitative Causal, Punctuality, Fishbone*

1. Introduction

On-time delivery refers to the extent to which customer orders arrive at their destination within the promised time period, aiming to achieve customer satisfaction. When customers order products, one important aspect they always consider is on-time delivery. If customers feel that the delivery schedule is met according to the estimated time, and the product arrives as expected, then this tends to create satisfaction among customers with the company. Timeliness of delivery is the benchmark and measure of the time period for delivering goods according to the promised schedule. On time delivery has a positive and significant influence on customer satisfaction (Siburian & Kartika, 2021)

The term logistics covers many very broad aspects and activities, so the meaning and definition can be explained in various ways. Basically, logistics activities are as old as human civilization, but the term itself is relatively new, consciously or unconsciously every human being, household, office, association or other organization, has elements and/or organizes logistics, even though in reality they do not always use it. the term (Rs & Indriani, n.d.).

The company delivers its products to customers using a logistics distribution network. A distribution network consists of the flow of products from producers to consumers through transfer points, distribution centers (warehouses), and retailers. The role of the distribution network and its management is very important for companies to increase sales and profits (Chandra, 2013).

The dynamics of the environment in which supply chains are developing and the demand to shorten product distribution cycle times require companies to redesign logistics distribution networks. Some issues that companies must pay attention to are production time, inventory location, and warehouse placement for customers. Decisions taken must take into account all factors and be coordinated with all supply chains to create efficiency. This coordination is especially necessary in a dynamic environment where logistics distribution network settings sometimes change significantly from initial planning. (Nugroho et al., 2020)

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There are external factors that hinder the goods delivery process so that it does not run as expected. Weather conditions can be a volatile nuisance, with storms, extreme temperatures or natural disasters hampering transportation and logistics. Ensure that vehicles are maintained optimally and used efficiently, as vehicle damage or non-optimal routes can cause delivery delays (Effect et al., 2022). The physical distance between the manufacturing facility and the shipping destination can impact the time required for transportation, adding another layer of complexity. Additionally, supply chain stability is critical. Any disruption in the supply chain, such as delays in obtaining raw materials or components, can cause ripples in production schedules and, ultimately, hinder timely delivery of orders (Karundeng et al., 2018).

The key to ensuring on-time delivery of orders in the manufacturing industry lies in effective production management followed by inventory control. To guarantee fulfillment of logistics deliveries, it is very important to integrate production planning and inventory control with the logistics department. This integrated approach ensures that orders are processed efficiently and delivered on time. Implementing production planning is essential for industries that aim to maximize profits by minimizing production and inventory costs, all of which contribute to achieving optimal delivery orders. An important element in this process is the master production schedule, a detailed plan that determines what and when the company intends to produce each finished product within a specified time period (Mulyani Setyowati et al., 2023). These schedules are created carefully, taking into account the company's production capacity, including permanent and subcontracted workforce. Another important technique is material requirements planning, which relies on a comprehensive material requirements list, inventory levels, receiving estimates, and master production schedules to determine the appropriate material requirements for production. Production planning is expected to be realistic and implementable (Soeltanong & Sasongko, 2021).

Therefore, this research aims to analyze the factors that influence the timeliness of order delivery in the plastics industry at PT. Indonesian Plastic Manufacturing by using fishbone analysis and developing new policies and strategies for increase the timeliness of order delivery at PT. Indonesian Plastic Manufacturing. Through this research, valuable insights can be provided to the plastic manufacturing industry in Indonesia, helping to identify weaknesses in production and delivery processes and implement policy strategies to improve operational efficiency in production and delivery of orders.

2. Literature review

Maximizing Punctuality

On-Time Delivery refers to the ability of a company or organization to deliver products or services to customers at promised or expected times. Punctuality is a critical factor in business, as the inability to meet delivery deadlines can result in customer dissatisfaction, financial loss, and damage to the company's reputation. According to Nuryanto et al (2022), it is expected that through the implementation of the delivery service of goods that will be picked up from the sender's warehouse to the right recipient of the goods, it can maintain the timeliness of delivery in order to improve service quality, by finally meeting customer satisfaction as the main goal.

Order delivery

Order delivery is the process of delivering products or services that have been ordered by customers from sellers or service providers. This process involves several steps, including order processing, preparation of goods or services, packaging, physical delivery or service delivery, and tracking to ensure the order arrives in the customer's hands safely and as expected.

According to Yuliana et al (2019), the definition of delivery is an effort to send goods from one part to another that can make it easier for consumers. Order delivery in the context of industrial manufacturing refers to the process of delivering manufactured products from a factory or production facility to a customer or distributor. In this context, order delivery

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involves a number of steps involving Order Acceptance, Order Processing, production, preparation of goods, and delivery. Creating efficient and reliable delivery involves various steps and strategies that can improve service quality and minimize risk and cost.

The Influence of Transportation Choices

Transportation is the movement of people or goods from one place to another using vehicles driven by humans or machines. Transportation is used to help people carry out daily activities more easily. Transportation moves products between different locations in the supply chain. Like other drivers, transportation has a significant impact on a company's responsiveness and efficiency. Faster transportation means a more responsive supply chain, but it doesn't mean it's more efficient. A company's transportation choices can also influence inventory levels and the location of distribution centers in the supply chain (Chandra, 2013).

Transportation problems are one of the important things and always exist in the delivery of goods. The causes change from time to time depending on various surrounding factors. These include unpredictable weather, substandard road quality, increasing vehicle density every day which is not matched by increasing road capacity, and driver negligence during deliveries. Therefore, proper weather forecasting can overcome this problem, but it is different from choosing the route that the company uses to deliver its goods (Indian hammer as its downstream product) to consumers. Business people need to pay attention to the distance of the intended delivery (The et al., 2022).

Supply Chain Distribution

According to Willem Siahaya (2013), distribution is a process of storing finished goods from producers to consumers or users when needed. According to the Popular Dictionary of Transportation and Logistics (2012), distribution is the movement or flow of goods from one place to another, or the transfer of goods from one place to another, using transportation tools and facilities. Transportation According to Willem Siahaya (2013), transportation is the movement or transfer of products from one location to another using a mode of transportation. Freight Forwarder, According to Wynd Rizaldy et.al (2013) "A freight forwarder is an agency or operator that organizes the activities of sending/receiving goods involving several modes of transportation using several documents required by transportation and the State related to these activities."

Transportation determines that route selection must consider the distance to the warehouse and the warehouse storage capacity. Distance, which is the main factor in this case, must be taken into account, because not only the shortest path is prioritized, but also storage capacity, because people are always wrong in determining priorities. This element is the basis for product delivery. To make route selection easier, companies need to pay attention to various aspects, such as distance, travel time, fuel consumption and travel route safety. All these things need to be considered in order to minimize the risk of making the wrong choice and not cause too big a loss. By understanding route characteristics, companies can avoid increasing storage costs due to long-term storage of goods in warehouses.

3. Research methods

This research uses a casual qualitative approach with analytical methods *Fishbone Cause & Effect* to understand and model production processes and supply chains in the plastics manufacturing industry. This method allows identifying variables that affect the timeliness of order delivery and causal relationships between those variables. Fishbone analysis also known as Ishikawa diagram is a fishbone-shaped graphic technique for visualizing several causes of a particular event or phenomenon. Fishbone diagrams were developed for quality control, prevention and potential causative factors of a problem (Figure 1) (Coccia, 2018).

The data used in the study were obtained through fact data in the field, and conducting interviews with interests in plastic manufacturing industry companies, direct observation of production processes, and analysis of industrial documents. Respondents to the interview were

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selected with consideration of representativeness and expertise in various fields related to the plastics manufacturing industry. A literature study was conducted to identify factors affecting the timeliness of delivery of manufactured products. Furthermore, interviews were conducted with industry experts and stakeholders to validate these factors and gain a deeper understanding of the dynamics of the plastics manufacturing industry. After the relevant variables are identified, a casual fishbone diagram is constructed to determine the causal relationship between the variables. Then the data is validated through triangulation methods (data source, data collection technique, time) that integrate multiple sources to ensure the accuracy of the findings. In addition, data analysis techniques include data reduction, data presentation, and conclusion drawing or verification through cross-examination and discussions are also carried out with stakeholders and experts to ensure the authenticity of findings (Fendy, 2017).

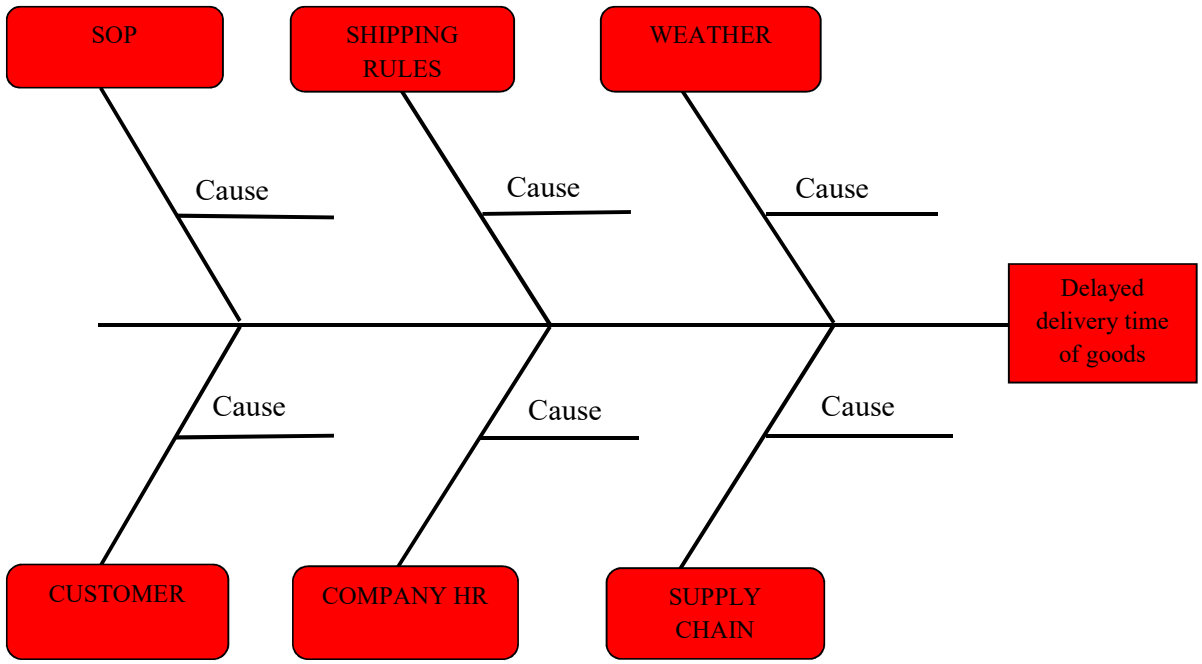

Fig. 1. *Fishbone Diagram of Delivery Time and Production Process.*

4. Results and discussion

Before designing a policy to ensure timely delivery, it is important to identify the issues that cause delivery delays. A deep understanding of causal in supply chains and production processes is considered in developing efficient policies to improve timely product delivery.

4.1 Delay in Product Delivery

In logistics and manufacturing, the timeliness of order delivery depends on internal and external factors. Internally, product quality and production schedules, determine efficient order processing and fulfillment. Production capacity determines the speed and volume of orders that can be processed. Manage costs effectively, achieving a balance between profitability and on-time delivery. In addition, customer satisfaction, which is the main goal, is closely related to the timeliness of order delivery (Nugroho et al., 2020).

Transportation management is an internal factor involving various activities within the transportation department in industrial, business, and other service organizations. This management is developed to deliver products from one place to another efficiently.

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Transportation management is an activity carried out by the transportation department or units in other industrial or trade and service organizations (manufacturing business and service) to move or transport goods or passengers from one location to another effectively and efficiently. Disruptions can occur in this management, such as changes in transportation, weather conditions, traffic congestion, distance, road access, policies of major transportation providers, and so on, which can cause delivery delays and result in customer dissatisfaction (Syafril et al., 2021).

Limited production capacity for products with high demand from customers can hamper the delivery process if production capacity cannot meet demand. This can result in lost profits and customer dissatisfaction. Another contributing factor is the lack of a regular production schedule, which leads to wastage of time and resources, inability to adapt to sudden changes in production, labor imbalance, deterioration in production quality, excess inventory, production delays, and dissatisfaction with delivery. Production planning and scheduling are needed by companies to ensure timely production activities so as to meet order delivery deadlines and maximize profits obtained.

Externally, factors affecting other delivery delays in the manufacturing industry can be attributed to problems in the supply chain, ineffective transportation management, production limitations, and unscheduled production. The supply chain is defined as collaboration among sources, manufacturers, distributors, retailers, logistics services, and others to ensure the safe delivery of products to customers (majid & Nugroho, 2011). This system bridges the production and distribution process of products from the company to consumers. Changes in production, such as faulty machinery, unmet raw materials, and other technical issues, can also have an impact on product delivery delays. Problems in the supply chain can arise in the loading or distribution process, such as defects during shipping and changes in government regulations. Sudden changes in customer demand can also affect supply chain processes and product delivery (Karundeng et al., 2018; Lia et al., 2015).

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4.2 Policy Strategy

Delays in the delivery of manufactured products can be minimized by developing various policy strategies. However, before planning an updated policy strategy, it is necessary to analyze the various challenges and factors causing delivery delays. One way this can be done is through a fishbone diagram illustrated as follows:

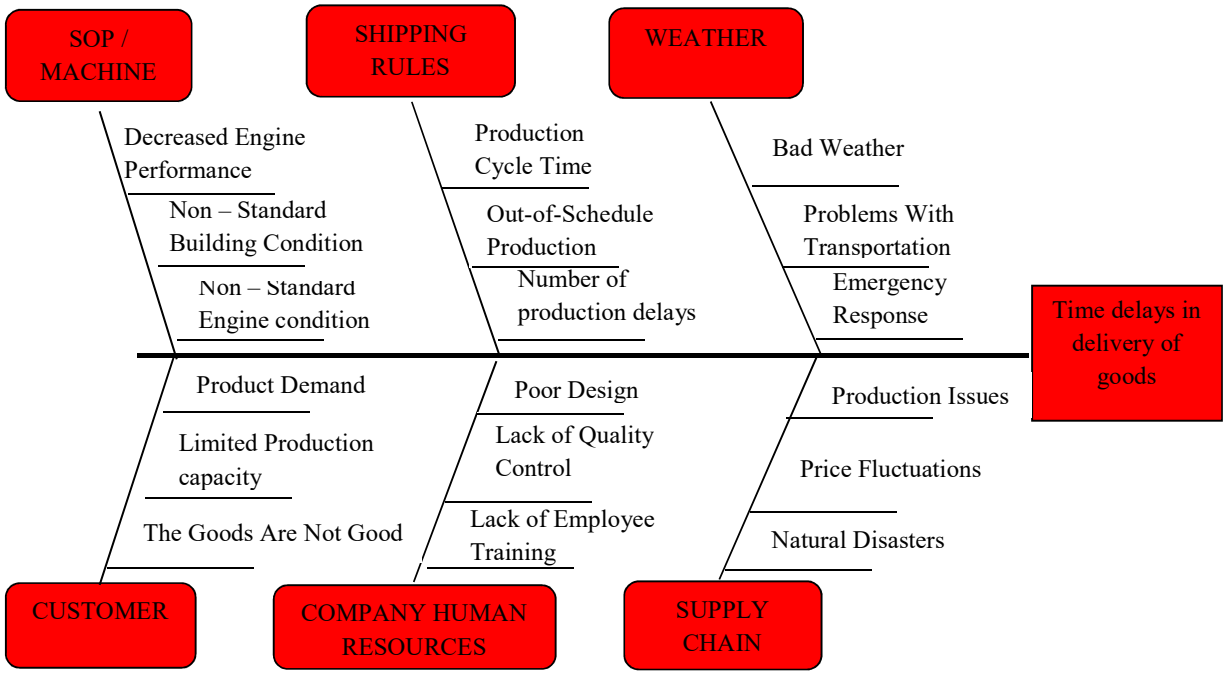

Fig. 2. *Fishbone Diagram of Strategies to Minimize Delays in Delivery.*

Based on the fishbone diagram, it can be seen that there are six factors that can affect product delivery time delays, namely machinery, shipping rules, weather, customers, company human resources, and supply chain. The diagram also explains some of the causes of delivery delays in each factor. After conducting an in-depth analysis of the fishbone diagram that has been made, then a policy strategy can be designed that can minimize delays in shipping goods.

4.2.1 Policies related to Machine Operations

The timeliness of product delivery is greatly influenced by adequate production facilities and infrastructure. Decreased engine performance can cause various disturbances such as the machine suddenly stops in the middle of production, unstable material mixtures, raw material measurement errors, and so on. This disruption will of course cause a decrease in the company's production capacity, so that the company is unable to meet market needs. This will then result in delays in the delivery of goods (Somar et al., 2021). Therefore, it is necessary to maintain and check production machines regularly to minimize damage and to find out whether the production equipment is still fit to operate or not. If a production equipment is no longer fit to operate, it should immediately replace the equipment to facilitate production. In addition, it is better at each stage of production to be supervised by someone who serves as a formula designer as well as to supervise production operators to avoid errors throughout the production process. The production department should also have a database of material completeness integrated with the PPIC and warehouse parts so that production scheduling is not only based on the schedule of machines used on the production floor but also the availability of raw materials and complete packaging materials (Ulina & Bakhtiar, 2019).

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4.2.2 Shipping Rules Policy

The implementation of timely delivery of orders can be realized with good time management. This includes forecasting or estimating the right delivery time, good emergency response if unexpected problems occur during order delivery while solving these problems quickly, and doing good time planning, namely by making a coherent order delivery schedule (Zhao et al., 2015).

Effective planning can also lead to timely delivery. This effective planning includes planning production, raw materials, employees, shipping, transportation, and also other facilities and infrastructure. This planning can be realized through the Dispatching rule. Dispatching rule is a regulation in schedule setting that aims to regulate the order of processes on each machine based on the priority of jobs waiting to be processed (Indriyati, 2021). The use of this rule in scheduling aims to reduce a number of important factors, such as the average production cycle time, average work delay, maximum time for late completion, the number of late jobs, and the average work completed outside the predetermined schedule. One commonly used method is "Shortest Processing Time," where priority is given to the product that has the shortest setup time and process time. The main goal is to increase efficiency and reduce disruptions in the production process (Hendy et al., 2019). If the dispatching rule can work properly, it can minimize delays in order delivery. Timely delivery will also increase customer satisfaction, so as to increase customer demand.

Production capacity planning is also indispensable in improving the timeliness of delivery. This is because, companies can take into account many products that must be delivered in a certain period of time and can easily choose the most appropriate and efficient mode of transportation. The production capacity of a manufacturing is important to consider in making MPS (Master Production Schedule). MPS is a short-term plan that specifies how many products should be produced in a certain period of time, usually several months ahead. The selection of production quantities in MPS must consider the production capacity of the factory or manufacturing facility. Capacity is used as a limitation in making production schedules for each machine. Capacity measurement using theoretical capacity (Hendy et al., 2019). In addition to planning production capacity, it is also necessary to control production. Production process control, known as Production Activity Control, is a series of actions involved in the implementation of operational plans that have been prepared. Production control includes managing the entry of materials into the production system, including raw materials and auxiliary materials, which are then processed into components or sub-assemblies. In addition, production control also includes the exit of finished products or spare parts from the production system. The goal is to ensure that demand can be met effectively, with the right quantity, on time in delivery, and with minimal production costs. In other words, production control helps ensure production operations run efficiently and effectively (Disi & Dwinanto, 2021). That way, the company can also estimate the time needed in shipping. Optimization of the chosen mode of transportation is also one of the important things to minimize delivery delays.

4.2.3 Policy on Weather Conditions

Weather conditions greatly affect the overall supply chain. Climate change and extreme weather events can have a major impact on supply chains, disrupting production, shipping, and product availability. Climate change, such as extreme temperature rises, floods, droughts, storms, and unpredictable seasonal changes, can affect all stages of the supply chain, including production, transportation, warehousing, and distribution. The impact can include delays in delivery, decreased product quality, damage to goods, increased operational costs, and higher risks to the overall supply chain (Purba & Wanda, 2014). Therefore, companies need to take proactive steps to identify, understand, and manage risks associated with extreme weather conditions and climate change in their supply chains. These include the development of

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adaptation strategies, diversification of supply sources, increased supply chain resilience, and more careful weather monitoring to mitigate possible negative impacts (Furrer et al., 2022).

4.2.4 Policies related to the Company's HR

Timely delivery of orders is also influenced by human resources in the company. Therefore, it is necessary to train employees, especially production and logistics staff so that they can understand the importance of timely delivery and work efficiently. From the training, it is expected that employees can apply it in the field so that employee skills will increase. This continuous improvement over time will make delivery time more efficient so as to minimize delivery delays (Mora-Monge et al., 2023).

Company employees are expected to have a good emergency response. This is necessary to anticipate if unexpected problems occur during order delivery while solving these problems quickly. Employees are also expected to be able to minimize non-operating time, maintain service levels even in adverse conditions, protect customer satisfaction, and always comply regulation and understanding risk management well (Zhao et al., 2015). Coordination and communication between the parties involved, especially company employees also greatly affect the timeliness of delivery of goods. Other solutions are offered to overcome shipping delays caused by lack of coordination and communication among the parties involved, such as explanations on fishbone diagrams of causation in production quality, delivery rules, and SOPs (standard operating procedures) of companies that are interrelated through real-time tracking.

4.2.5 Supply Chain Policy

Policies related to the supply chain that can be done to reduce delays are by tracking goods in real time and communicating with the team well. Real-time tracking of goods includes pre-alerts, build stock alerts, and stock visibility. Pre-alerts are initial notifications given by suppliers to companies so that they can check. If there is a very urgent part number, the company can immediately notify the supplier so that the goods are immediately shipped on the same day, to avoid sudden supply shortages. Without pre-alerts, there can be sudden supply shortages if there is an urgent part number and no notification to suppliers. A stock alert build is the act of producing more inventory than current demand, with the intent to anticipate an increase in demand that may occur in the future. The company performs this action once a week. Visibility stock is the amount of product inventory available and can be clearly seen in the warehouse or storage area. Stock visibility can help overcome difficult communication issues with suppliers when companies need raw materials suddenly due to variations in the production floor. This can help increase openness and understanding between companies and suppliers in the face of unexpected changes in inventory needs (Wijaya, 2022).

In addition to tracking goods, other policies such as updating inventory in real time are also important to minimize shipping delays. Real-time inventory updates can be done with the help of technology such as Enterprise Resources Planning (ERP) to make it happen. Enterprise Resources Planning (ERP) is a software used by companies to integrate information from each division, so that divisions within the company can use information in realtime. The ERP system consists of several diverse modules, including Human Resource Management, Finance, Customer Relationship Management, Project Management, Order to Payment, Procurement to Payment, and Manufacturing (Raharjo et al., 2023). By updating inventory information in realtime, companies can monitor the inventory of raw materials and products in warehouses in realtime, so that companies can meet raw material needs before they run out. In its implementation, it can also cooperate with suppliers to be more efficient. In addition, it is also necessary to carry out good inventory management including stock monitoring, procurement, capacity control, product life cycle, cost control, and monitoring changes in customer demand. That way, timely delivery of orders will be realized, so that it will reduce the costs that must be incurred.

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5. Conclusion

The timeliness of order delivery in the manufacturing industry is influenced by internal and external factors. Internal aspects include production processes, supply chain management, and production capacity. External aspects include market factors, transportation, and industry regulation. Various problems that cause shipping delays in the manufacturing industry include supply chain disruptions, transportation disruptions during the delivery process, production limitations, and irregular production activity schedules. To minimize shipping delays in the plastics manufacturing industry, several policy strategies need to be established. These include effective time management, efficient production planning, increased resources, real-time tracking of goods, effective team communication, production capacity planning, real-time inventory updates, and employee training. These policies not only aim to minimize delivery delays but also to reduce costs and increase customer satisfaction.

6. Implication

This research provides clear insights and guidance to plastic manufacturing companies in Indonesia on how to maximize the timeliness of order delivery. The strategies and policies formulated can help companies in improving their operational efficiency. Based on the research conducted, companies can understand how each factor that causes delivery delays affects each other, both directly and indirectly. By identifying and addressing the factors that cause delays in order delivery, companies can reduce the risk of delays, thus maintaining customer satisfaction, avoiding contract penalties, and securing the company's reputation.

7. Research limitations

The research conducted is limited to one company, so further research involving different companies in the plastics manufacturing industry with potentially different characteristics and challenges is needed. Samples from other companies can provide a more comprehensive perspective. In addition, it is important to consider the use of additional data analysis methods such as regression analysis, simulation modeling, or other statistical analysis. These methods can help measure relationships between variables and provide deeper insights.

In industry, particularly in plastics manufacturing, changes in various aspects are frequent. Therefore, it is very important to validate the results of the study against actual field data. In addition, periodic observation is also needed to understand the impact of the policy strategy implemented. This is very important to ensure the relevance and effectiveness of policy strategies and to form the basis for evaluation for future research.

8. Reference

Chandra, A. (2013). Analisis Kinerja Distribusi Logistik Pada Pasokan Barang Dari Pusat Distribusi Ke Gerai Indomaret Di Kota Semarang. *Fakultas Ekonomika Dan Bisnis Universitas Diponegoro Semarang*.

Coccia, M. (2018). The Fishbone Diagram to Identify, Systematize and Analyze the Sources of General Purpose Technologies. *Journal of Social and Administrative Sciences*, *4*(4), 291–303. https://doi.org/10.1453/jsas.v4i4.1518

Disi, S., & Dwinanto, P. (2021). Pengaruh Pengendalian Proses Produksi Dan Output Produksi Terhadap Bonus Pada PT Glostrtar Indonesia. *Jurnal Mahasiswa Akuntansi*, *2*(1), 169–188.

Effect, T. H. E., Supply, O. F., Strategy, C., On, C., Performance, C., Advantage, C., & Orientation, M. (2022). *THE EFFECT OF SUPPLY CHAIN STRATEGY AND HR*. *5778*, 178–189.

Fendy, P. Y. (2017). Pengembangan E-Learning Berbasis Moodle Untuk Peserta Kursus Di

ISSN: 2622-5778 (online)
Advances in Transportation and Logistics Research
http://proceedings.itltrisakti.ac.id/index.php/altr

Swift English School Yogyakarta. *E-Jurnal Prodi Teknologi Pendidikan*, *VI*(8), 813–827.

Furrer, M., Mostofi, H., & Spinler, S. (2022). A study on the impact of extreme weather events on the ceramic manufacturing in Egypt. *Resources, Environment and Sustainability*, *7*(February), 100049. https://doi.org/10.1016/j.resenv.2022.100049

Hendy, J., Etenia, E., & Sutapa, N. (2019). Perbaikan Jadwal Produksi untuk Meminimalkan Makespan pada Kegiatan Produksi Kardus di PT. X. *Perbaikan Jadwal Produksi Untuk Meminimalkan Makespan / Jurnal Titra*, *7*(2), 117–122.

Indriyati, I. (2021). Service Quality Terhadap Loyalitas Pelanggan Online Melalui Kepuasan Pelanggan Pengguna Layanan Aplikasi Grab. *Jurnal Manajemen Bisnis Transportasi Dan Logistik*, *6*(3), 265–274. https://doi.org/10.54324/j.mbtl.v6i3.585

Karundeng, T. N., Mandey, S. L., & Sumarauw, J. S. B. (2018). Analisis Saluran Distribusi Kayu (Studi Kasus Di CV. Karya Abadi, Manado) Analysis of Timber Distribution Channels (Case Studies On CV. Karya Abadi, Manado). *Analisis Saluran…… 1748 Jurnal EMBA*, *6*(3), 1748–1757.

Lia, H., Sari, M., & Trisakti, S. (2015). *Analisis Faktor Penyebab Keterlambatan Pengiriman Produk Arnotts ke Alfamart Area Jabodetabek dan Banten PT Intan Utama Logistik*. *3*, 11–20.

majid, suharto abdul, & Nugroho, A. (2011). The Low Performance of Indonesian Domestic Flight Punctuality. *Proceedings of the Eastern Asia Society for Transportation Studies*, *2011*(2), 426.

Mora-Monge, C. A., Fatoki, J., Arslan, F., & Rauniar, R. (2023). Exploring drivers of business performance in web-enabled supply chains: the role of web technology training and supply chain integration. *Journal of Enterprise Information Management*, *36*(4), 1135–1157. https://doi.org/10.1108/JEIM-09-2022-0318/FULL/XML

Mulyani Setyowati, T., Handayani, S., Amanda Widyasanti, A., Herma Oktavia, S., Wardana, A., & Ringan Purba, O. (2023). Risk Management in the Handling of Human Remains in Cargo at PT Dharma Bandar Mandala Soekarno Hatta. *KnE Social Sciences*, *2023*(2012), 758–769. https://doi.org/10.18502/kss.v8i9.13390

Nugroho, E., Santoso, H. B., & Safi'i, I. (2020). Analisis Pengaruh Kualitas Produk Terhadap Kepuasan Pelanggan. *JURMATIS : Jurnal Ilmiah Mahasiswa Teknik Industri*, *2*(2), 106. https://doi.org/10.30737/jurmatis.v2i2.953

Nuryanto, N., Elyatuzaka, E., & Ridho, A. (2022). Peningkatan Kualitas Pengiriman Barang Melalui Sistem Door To Door. *Majalah Ilmiah Bahari Jogja*, *20*(1), 12–25. https://doi.org/10.33489/mibj.v20i1.287

Purba, O. R., & Wanda, J. (2014). Penyebab Keterlambatan Pengiriman Barang Impor Pada Customer. *Jurnal Manajemen Bisnis Transportasi Dan Logistik, Vol.1.No1 September 2014 7*, *1*(September), 42–59.

Raharjo, J. H. R., Nur Azizah, A., Bimantoro, A., Renanda Zulfian, V., Prasetyo, E., & Studi Manajemen Fakultas Ekonomi Dan Bisnis, P. (2023). Penerapan Enterprise Resource Planning Dalam Supply Chain Management Pada Minimarket Family Cukir. *Jurnal*

ISSN: 2622-5778 (online)
Advances in Transportation and Logistics Research
http://proceedings.itltrisakti.ac.id/index.php/altr

Ilmiah Wahana Pendidikan, *9*(16), 670–683. https://doi.org/10.5281/ZENODO.8263447

Rs, M., & Indriani, Y. D. W. I. (n.d.). *DAMPING RUBBER BEARING*. 414–438.

Somar, E., Suparman, A., & Raga, P. (2021). Peningkatan kinerja operasional perusahaan Jasa Pengurusan Transportasi dalam meningkatkan kepuasan pelanggan. *MBR (Management and …*. https://ejournal.unikama.ac.id/index.php/mbr/article/view/5904

Syafril, A., Putri, T. H., & Subandi, S. (2021). Kendala Transit Time Performance Pada Proses Pengiriman Barang. *Jurnal Manajemen Bisnis Transportasi Dan Logistik*, *7*(2), 125–134. https://doi.org/10.54324/j.mbtl.v7i2.653

The, E., Of, I., Speed, D., Packages, D., Shopee, I. N. E., Express, S., On, S., In, S., & Java, N. B. (2022). *Exploring the Impact of Delivery Speed and Damaged Packages in E-Commerce Shopee*. *5778*, 777–788.

Ulina, J., & Bakhtiar, A. (2019). Analisis Faktor Penyebab Keterlambatan Produksi Dan Output Shortage Pada Pt Cedefindo. *Industrial Engineering Online Journal*.

Wijaya, S. P. (2022). Upaya Perbaikan Pemenuhan Kebutuhan Packing Box di PT . Schneider Electric Manufacturing Batam (SEMB). *Jurnal Tirta*, *10*(2), 49–56.

Yuliana, K., Saryani, S., & Azizah, N. (2019). Perancangan Rekapitulasi Pengiriman Barang Berbasis Web. *Jurnal Sisfotek Global*, *9*(1). https://doi.org/10.38101/sisfotek.v9i1.223

Zhao, J., Cao, C., Zhao, J., & Cao, C. (2015). Review of Relief Demand Forecasting Problem in Emergency Logistic System. *Journal of Service Science and Management*, *8*(1), 92–98. https://doi.org/10.4236/JSSM.2015.81011