

IMPLEMENTATION OF FORCE MAJEURE ON PRODUCTION COSTS AT PT JAWA LILY FURNITURE IN PROBOLINGGO REGENCY

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Abstract :

Constraints are activities that prevent companies from carrying out production activities. Along with the increasingly competitive world economy today, industrial companies are required to be more sensitive in anticipating constraints that occur both internally and externally. These constraints must be considered by the company because they can hinder the production process which has an impact on production costs and sales volume which ultimately causes losses for the company. One tool that can identify a company's constraints is Constraint Theory. This study aims to determine what constraints occur in the production process and the impact of these constraints on production costs. This research uses an internet website, also known as the Digital Research Method (Online Search), and this method involves the use of the internet and digital technology to collect data, analyze information, and produce new results. This research also uses a literature study because it is a literature study. The special characteristic used as a basis for developing research knowledge is that the research deals directly with the text or data presented, not with field data or direct witnesses of the event. Researchers only deal directly with sources that already exist in the library or ready-to-use data, as well as with secondary data used. The impact of these constraints on production costs is the loss of raw material costs and an increase in factory overhead costs.

Keywords: *sharia financing; sharia banks; public interest; education; socialization;*

INTRODUCTION

The furniture industry is an industry that processes raw materials or semi-finished materials from wood, rattan, and other natural raw materials into finished furniture products that have higher added value and benefits. The wood processing industry is divided into two groups, namely the upstream wood processing industry group and the downstream wood processing industry group. The upstream wood processing industry group is the primary wood processing industry, namely the industry that processes round wood/logs into various wood sorts. The downstream wood processing industry group is the industry that produces wood products including dowels, moldings, doors, windows, wood-flooring, and the like. (Industry, 2011)

To find out the total cost of production, the steps that must be taken are to add up the total fixed costs and total variable costs. Fixed costs refer to costs that are not affected by the amount of output produced by the company. Knowing the total cost of production

is very important for companies to determine selling prices, plan budgets, and make other strategic decisions. By understanding the components of costs and how to calculate them, companies can manage resources more effectively and efficiently. (Agung et al., 2020)

Meanwhile, variable costs are costs whose value can change, influenced by the volume of work carried out by the company. Unlike fixed costs, which remain constant regardless of the amount of goods produced, variable costs will increase or decrease depending on how much product is produced. Variable costs are an important component of cost analysis and business decision making. Understanding their nature and impact on total production costs allows companies to plan and manage their operations more effectively, and make better decisions about pricing, production, and profitability. (Sulistiyo et al., 2019)

The development of the furniture industry in Indonesia is able to provide a positive contribution to the country's economy. One type of manufacturing industry has proven to be a strategic commodity for the Indonesian economy. (Manampiring, 2021). Therefore, the development of the furniture industry in Indonesia has indeed made a significant contribution to the country's economy. One of the main reasons is that Indonesia has abundant natural resources, such as wood, which is the main raw material in making furniture. In addition, Indonesia is also known to have expertise in handicrafts and furniture design, which is competitive in the international market. The Indonesian furniture industry is able to become a strategic commodity because of the increasing global demand, especially from developed countries such as the United States and Europe. The price and quality advantages of Indonesian furniture products, as well as various other competitive advantages, such as unique designs and the use of natural raw materials, make Indonesian furniture products in demand in the export market. With the increasing export of furniture products, this industry also plays a role in creating jobs, empowering communities, and increasing state revenues through taxes and foreign exchange.

In addition, the Indonesian government continues to support the furniture industry through various policies and programs that can strengthen this sector, such as improving the quality of human resources, product innovation, and export promotion. Overall, the furniture industry is an important sector in the Indonesian economy, with great potential to continue to grow and provide a positive impact on broader economic welfare. However, the development of the furniture industry can be hampered by obstacles that occur. One of them is the company's management ability. Good management skills are needed so that the company's goals and targets can be achieved with efficient and effective steps. (Ivan Aditya Gunawan, Aulia Rahman Majid, 2013)

In Java, especially East Java, there are many furniture companies, one of which is PT. Jawa Lily Furniture. PT. Jawa Lily Furniture is a company engaged in the furniture industry in Indonesia which is located in Sepuh Gembol Village, Wonomerto District, Probolinggo Regency. PT. Jawa Lily Furniture is likely to produce various types of furniture, including, tables, dining chairs, sofas, guest chairs, cabinets and storage shelves as well as custom products according to customer requests. PT. Jawa Lily Furniture uses high-quality raw materials, such as solid wood (eg, mahogany, teak), MDF, particle board, and environmentally friendly finishing. It also uses modern production techniques that combine traditional skills with the latest technology to ensure quality and efficiency. PT. Jawa Lily Furniture is committed to providing high-quality furniture products with attractive designs and satisfactory services. With a focus on innovation and sustainability, the company strives to meet customer needs in both domestic and international markets.

In fact, at the end of November 2020, PT. Jawa Lily Furniture experienced a fire tragedy in the factory that claimed 2 of its employees, according to one of its employees, the cause of the fire that occurred in the factory is not yet known whether it was caused by negligence or not, what is clear is that safety equipment and other facilities have been met. There are also many items in the building, because when they are finished, the items are

immediately moved, including the maximum number of workers in the building of 100 people.(Fahmi, 2020)

Several studies conducted by other researchers on PT.Jawa Lily Furniture includes:

1. Restriani (2011) conducted a study entitled Production Cost Analysis with Theory of Constraint (TOC) Approach (Case Study at PT. Mitra Lestari Abadi (MLA) Banyumas). This study aims to apply the Theory of Constraints and its impact on production costs in November-December 2011 at PT. Mitra Lestari Abadi (MLA) Banyumas. The research method used is qualitative. The results of this study indicate that the application of the theory of constraints can minimize production costs, or in other words, the application of the theory of constraints affects the amount of production costs.
2. (Sihadi et al., 2018)who conducted a study entitled Identification of Constraints in the Production Process and Their Impact on Production Costs at UD. Risky. This study aims (1) to identify the constraints that occur at UD. Risky, (2) to determine the impact of these constraints on production costs, (3) to find solutions to resolve these constraints. The research method used is qualitative research with a descriptive approach.
3. Research conducted by(Wicaksono (APP Polytechnic), 2017)namely providing suggestions for the arrangement of the layout of the room and industrial facilities and improving the existing process flow by considering input from the company. This research was conducted in the stingray skin processing industry, CV Dian Mandala, Yogyakarta.
4. The research conducted by Yuniarti (2009) is to provide a proposal for a layout design due to the expansion of the UHE and the layout of the remaining UKL area and its expansion by considering all production activities. This research was conducted at PT Mega Andalan Kalasan which is a manufacturing industry with hospital furniture equipment products. At the time the research was underway, PT MAK wanted to move the production process of components and assembly of pipes and stainless steel products to a new place, namely the Metal Component Unit (UKL) and the Hospital Equipment Unit (UHE). The methods used in this study were CRAFT, From to Chart and SLP (Systematic Layout Planning).
5. Analysis of operational management functions at PT. Puyuh Plastic.(Santoso, 2017)The results of this study indicate that the company has a capacity that is not excessive and can produce products according to buyer demand, a strategic location that is easily accessible to suppliers and workers, a layout that pays attention to employee safety and security, good product quality that is difficult for competitors to imitate, and a clear production method.

RESEARCH METHOD

This research method uses an internet website or what is commonly called Digital Research Methods (Online Search), namely this research method involves the use of digital technology and the internet to collect data, analyze information, and produce new results. This study also uses library research so that the method used in the study is a library study. Special characteristics that are used as a basis for developing research knowledge include; this study is faced directly with the data or text presented, not with field data or through eyewitnesses in the form of events, researchers only deal directly with sources that already exist in the library or ready-to-use data, as well as secondary data used.

Literature research is done by examining the literature and analyzing relevant topics. Literature searches can use journals, books, dictionaries, documents, magazines, and other sources without conducting direct field research. One way to review literature is to provide a new theory with the support of appropriate data collection techniques. One of the research

methods that uses Internet Searching is a data collection technique that uses search engines to obtain information from various times and places around the world. This data collection technique is very relevant in the modern era, especially for research that requires large data that is not possible to collect directly in the field or respondents who are difficult to reach to carry out documentation and interview activities physically.

FINDINGS AND DISCUSSION

1. Force majeure

Force majeure often includes events described as action Lord, although the event remains legally separate from the clause itself. In practice, most force majeure clauses do not completely excuse a party's default but suspend it for the duration of the force majeure.

Force majeure is a concept in civil law and is accepted as a principle in law. Mochtar Kusumaatmadja stated that force majeure or vis major can be accepted as a reason for not fulfilling the implementation of obligations due to the loss/disappearance of the object or purpose that is the subject of the agreement. This condition is aimed at physical and legal implementation, not only because of difficulties in carrying out obligations. Mieke Komar Kantaatmadja gave a similar view, namely: (Harry, 2009)

1. A change in circumstances does not exist at the time the agreement is formed.
2. The change concerns a condition that is fundamental to the agreement.
3. These changes could not have been anticipated by the parties.
4. The consequences of such changes must be radical, so that they change the scope of the obligations that must be carried out according to the agreement.
5. The use of this principle cannot be applied to border agreements and also to changes in circumstances due to violations committed by the party filing the claim.

In relation to the failure to achieve the intent and purpose of the agreement, it can be caused by force majeure or compelling circumstances and is usually aimed at an event that is beyond human reach to avoid the event. Force majeure is a legal concept originating from Roman law (*vis motor cui resisti non potest*) which is adopted in various legal systems. The doctrine in common law interprets this word as an inability to perform a performance on a contract, with an analogy but not identical to force majeure to perform a performance on a contract, with an analogy but not identical to force majeure. (Jones, 2011)

2. Production cost

Cost is a sacrifice of economic resources, calculated in monetary units to be exchanged for goods and services, which have occurred or are likely to occur for a specific purpose. Cost is a sacrifice, expenditure or exchange value in monetary units made to obtain benefits either for the present or the future in order to achieve certain goals in an organization. (Setyaningrum & Hamidy, 2008)

Costs are grouped into several types as follows:

1. Grouping by expenditure object
This cost classification uses the name of the expenditure object as the basis for the classification. An example of this cost classification is salary costs. All costs related to salaries are grouped together and named salary costs.
2. Grouping according to main function in the company.
An example of this cost classification is in a manufacturing company. A manufacturing company has 3 main functions. These functions include production, administration and general, and marketing. All costs used to produce goods are grouped into production costs. Then the costs incurred for the company's administrative needs are grouped into administration and general costs. All expenses used for product marketing are grouped into marketing costs.

3. Grouping according to relationship to something being financed
Costs are grouped into direct costs and indirect costs. Direct costs are costs incurred for the production of goods and these costs can also be directly charged to the product.
4. Classification of costs according to their behavior in relation to changes in the volume of activity
According to this classification, costs are divided into variable costs, semi-variable costs, semi-fixed costs, and fixed costs. Variable costs are costs whose total changes are proportional to changes in the volume of activity. If the volume of activity increases, the costs will increase and vice versa. In semi-variable costs, the total amount does not change proportionally to the volume of activity and contains elements of fixed costs and variable costs. Semi-fixed costs are costs that remain the same for a certain volume of activity and change by a constant amount at a certain volume of activity. Furthermore, fixed costs are costs whose total amount remains the same even though there are changes in the volume of activity.
5. Classification of costs based on the time period of their benefits
There are two types of costs that are classified, namely capital expenditure and revenue expenditure. In capital expenditure, costs incurred by the company are used to finance something that provides benefits for more than one accounting period. Unlike capital expenditure costs incurred to obtain something that has longer benefits, in revenue expenditure, costs are incurred for something that provides benefits only in the accounting period after the expenditure occurs.

Production is the work of producing, repairing, making, and adding value to the utility of goods and services. While people who do production are called producers. As for adding value to the utility of an item, we can explain it with the following example. For example, sand in the river is less or worthless. But when the sand is in the hands of the miner, the sand will be useful because it can be traded. When the sand then moves to someone who is building a house, the sand will be more useful because it turns out to be one of the main materials for building a house.

So the production process is an activity to create goods and services through changes from input to output. Production activities are the main activities in a company where this activity absorbs most of the resources owned by a company, both labor resources and raw materials. The definition of production can be distinguished in a narrow sense and production in a broad sense. Production in a narrow sense is an activity to produce goods. The definition of production in a broad sense, namely all human activities in order to increase the usefulness of goods / services in meeting human needs.(Muazza, 2019)

And the core objectives of production include:

1. Producing goods and services: satisfying human needs for goods and services and achieving prosperity.
2. Get profit from selling the products
3. Opening up employment opportunities. Companies need skilled and expert workers according to the specifications of the type of business they do.
4. Replacing damaged goods: Availability of goods and services, especially vital and much needed ones, must be maintained by reproducing and repairing damaged goods. Companies that produce well-known goods usually always open repair service centers for damaged goods in the hands of their consumers.

Production Cost is the cost of manufacturing or commonly called production cost or by another name factory cost, is the result of the sum of three types of costs, namely direct raw material costs, direct labor costs, factory overhead costs. Production cost is an expense or sacrifice made to change raw materials into semi-finished materials to become finished products.(Jannah & M, 2022)

The elements of production costs consist of:

1. Direct material costs

Direct material costs are costs associated with raw materials used directly in the production process of a product or service. Direct material costs include the purchase price of raw materials, shipping costs of raw materials, and storage costs of raw materials. Direct material costs are the acquisition costs of all direct materials that become an integral part of forming finished goods. For example, wood used to produce tables or chairs. (Ratu et al., 2021) There are two types of methods for recording the costs of raw materials used in production, namely:

- a. The perpetual inventory method is a method that records every change in inventory in the inventory account so that the amount of inventory can be known at any time.
- b. The physical inventory method is a method that records every change in inventory in the purchase account so that the amount of new inventory can be known at the end of the accounting period. The author concludes that direct material costs are expenses incurred for the use of primary production raw materials that are directly related to the products to be produced.

2. Direct labor costs

Labor is the physical and mental work power using human resources (employees) to produce certain products or services. Labor costs are all compensation given due to the use of human resources. (Nuzulia, 1967)

Direct labor costs are the costs of all direct labor that physically uses both hands and machines involved in the production process to produce a product or finished goods. For example, workers who work as machine operators in factories or who work as wood cutters in the production of tables or chairs. Direct labor costs are charged to the production cost element while indirect labor costs are charged to factory overhead costs. In addition, there is also a classification of labor costs into three large groups, namely:

- a. Salary and wages, which is the amount of gross salary and wages minus deductions such as employee income tax and old age insurance costs. The method of calculating employee wages is the wage rate multiplied by the employee's working hours.
- b. Overtime premium, overtime premium will be given if employees work more than 40 hours in one week.
- c. Labor related costs

3. Factory overhead costs

Factory overhead costs are all production costs other than direct material costs and direct labor costs. Factory overhead costs are indirect costs of products. In relation to the concept of indirect costs, factory overhead costs are all production costs that cannot be easily and accurately traced to products. Factory overhead costs are indirect product costs so that factory overhead costs cannot be directly charged to products. Factory overhead costs are charged first to the cost collection point called the cost pool, such as a plant, production department or activity, and then the cost of the cost pool is charged to products. (Harahap, 2022)

3. Production process

Process is a way, method and technique of how the existing sources of labor, machines, materials and funds are actually changed to obtain a result. While production itself is an activity to create or add to the usefulness of a good or service. (Sugiyono, 2014)

Production is one of the important parts of a company that develops the main function of creating and increasing the usefulness of goods or services that will be marketed

to consumers, so it can be said that production is a place where 25 processes of changing input or production resources (input) into output occur.(Wulandari et al., 2018)

From the description above, it can be concluded that regarding the production process, what is meant by the production process is: "A way, method or technique for adding benefits or creating benefits, form, time and place for production factors so that they can be useful for fulfilling consumer needs. This is because the production process is a way of doing actions to increase profits or create them. Processing means processing raw materials and auxiliary materials manually or with equipment. producing products that have more value than previous products.(Setiawati, 2002)

As for production here is the transformation of production factors (raw materials, labor, capital, and technology) into production results or products. In order for the purpose of production, namely obtaining the number of goods or products (including the type of product), with the price in time and quality expected by consumers, the production process needs to be well regulated.

So, this process is also a process of combining various elements of production to create something useful for consumers. So, anyone who works in business should know these stages. the process of producing goods or services that are right and in accordance with expectations and needs so that there is no failure.

➤ **Factors Affecting the Production Process**

Specifically, production factors are all business needs that producers need to carry out production smoothly and easily. Considering this understanding, it is clear that production elements are components that must be present in a company. If there are none or only one of them is missing, production will not occur. This means that there will be no products or services produced, and the production process will be delayed, which will result in losses for your business. The company may go bankrupt.(Yusup et al., 2014)The following factors influence the production:

1. Natural Factors

Natural factors can be both supporting and inhibiting factors, because nature cannot be controlled by humans. Therefore, there must be other alternatives if nature is not supportive, such as natural disasters and so on.

2. Labor

Labor is a human production factor that directly or indirectly carries out production activities. The labor production factor is also categorized as an original production factor. In the labor production factor, there are physical elements, thoughts, and abilities possessed by the workforce.(Tandiawan et al., 2024)

3. Capital factor

Capital or capital production factors are related to something that can be used to support the production process or others. Capital can be present in the form of money, equipment and so on.

4. Skill factor

A person's expertise or skills in utilizing/using production factors in order to produce goods or services and also bear the risks in every endeavor.

➤ **Benefits of Production Factors**

The benefits of factors that support a production process are as follows:

1. Streamline Product/Service Production

The first goal is of course to facilitate the production of products/services. Because all the facilities and infrastructure are already available. In fact, this is not only related to product production. But also with the marketing process, capital fundraising, company management and so on. Because of this, production factors must be completely available. Do not let one element be missing because it can ruin everything. (Irawati & Hardiastuti, 2016).

2. Providing Benefits to Companies

The next goal is to provide benefits to the company. This is clear because if the production factors are available and running well, of course the products produced are also good. If this is marketed and sold in the market, of course the producer will get a big profit. So it can be used as capital to increase business including developing further production factors.

3. Products According to Consumer Expectations

The next goal is that the products produced by the company are more in line with consumer expectations. Both in terms of quality and quantity. This requires complete and high-quality production factors. If this is not available, do not expect the product to be liked by customers at least appropriate for their needs.

Because of these goals, production factors must be included in the company's plan. At least it must be known what kind of means can make products according to the desires of the target market (consumers). When viewed from this goal, company management should indeed direct production factors to priority points, because this can bring satisfaction which in turn can increase sales. (Sushil & Starr, 2014)

➤ **Benefits of the Production Process**

The production process will certainly provide benefits, the benefits of the production process are as follows:

1. **The Production Process is More Effective and Efficient** With the occurrence of mass production and the help of machines so that the product results are more and faster. Of course it produces effectiveness and efficiency in terms of time and production costs. In addition, because it uses machines, it minimizes the human resources involved so that it can cut financial costs for human resources. However, it must prioritize machine maintenance costs for the production process. (Novianty et al., 2022)
2. **Number of Products Produced** With the use of production machines, the speed of producing thousands of product units is certainly greater. So that in one day it can produce the number of products according to the market target. So that it will meet the needs of orders from consumers who subscribe to the product.
3. **Only Needs a Few Human Resources** Basically, in mass production, it is very much determined by machines that work continuously. So only a few human resources are needed. Because it has been taken over by production machines, so that human resources are only needed in the supervision section, and certain sections.
4. **Looser Production Supervision Process** When the production process is running using production machines, workers only supervise flexibly. Namely by ensuring that the process carried out by the machine runs smoothly. In the goods packaging section, for example, new human resources are needed and supervision is needed. So that overall production supervision looks looser in the production machine section. (Purnomo & Tsany, 2024)
5. **Minimizing Production Errors**
If the machine used in the production process runs perfectly. Then production errors can be minimized because the existing machine has been set with the system. So that only maintenance and supervision are needed in the production process while the machine is operating.

With the benefits obtained in mass production. Of course there are still advantages and disadvantages that are produced during mass production. Some of these advantages of mass production can be a positive value in the implementation of the production of a

product.

5. Constraint

Constraints are conditions where symptoms or obstacles and difficulties become obstacles to achieving a desire. Constraints mean obstacles, obstacles, factors or conditions that limit, hinder or prevent the achievement of targets or forces that force the cancellation of implementation. Constraints often occur in the world of education, such as in learning models, approaches, learning media and assessments of students. So constraints are problems or conditions that become obstacles to achieving the desired goals and must have certain solutions that are in accordance with the constraints faced.(Septianingrum, 2013)

The theory of constraints is a strategic technique used to help companies effectively improve critical success factors (CSFs) that are considered very important: cycle time, which is the speed at which raw materials are converted into finished products. The theory of constraints is a method, approach and tool used to maximize revenue by identifying constraints that occur during the production process and then analyzing ways to overcome these constraints.

Types of constraints can be distinguished into: internal constraints, external constraints, loose constraints and binding constraints. Basic Concepts of Theory of Constraints. The basic concepts of the theory of constraints are as follows: Throughput is a measure of the income earned by a company through sales activities. Inventory is everything owned and potentially available that is spent by the company to change raw materials into throughput. Operating costs are all sacrifices made by the company to change inventory into throughput. Steps in the Theory of Constraints. (1) identifying constraints, (2) determining and designing the best production activities when faced with constraints, (3) maximizing production activities with the constraints that occur; (4) increasing resilience when facing constraints; (5) redesigning the production process.(Setyaningrum & Hamidy, 2008)

FINDINGS AND DISCUSSION

1. Production Costs and the Impact of Force Majeure on PT. Jawa Lily Furniture

a. Raw Material Cost

The main raw materials in the furniture industry are wood, upholstery, metal, and additional materials such as fabric or synthetic leather. In Indonesia, wood is a very important raw material, and the price of wood is often influenced by factors such as the availability of natural resources, government regulations regarding logging permits, and global market fluctuations. In addition, the procurement of raw materials from local and international suppliers also affects costs. PT Jawa Lily Furniture does not use imported round wood or wood products as raw materials. For PT. Jawa Lily Furniture, efficiency in procurement and material selection can affect the control of raw material costs.(Widiarti et al., 2023)

b. Labor costs

Labor costs in the Indonesian furniture sector vary depending on skill level and the area where the company operates. In Probolinggo, which has a relatively lower cost of living compared to big cities, labor costs can be more affordable. However, companies still need to consider worker welfare and the cost of skills training for workers to maintain production quality.

c. Factory Overhead Costs

Overhead costs include electricity costs, equipment depreciation, machine maintenance, and factory administration costs. Efficient energy use and routine machine maintenance are key to reducing overhead costs. As a furniture company in Indonesia, PT. Jawa Lily Furniture must take into account unstable energy costs, as well as depreciation costs for production equipment.

- **The Impact of Force Majeure on Production Costs**

The influence of force majeure on production costs at PT. Jawa Lily Furniture can have several impacts due to the fire that occurred. Here are some possible impacts that can occur on the production costs of PT. Jawa Lily Furniture:

1. **Raw Material Supply Disruption**

If force majeure causes a disruption in the supply of key raw materials, such as wood, metal, or upholstery (a fire that shuts down a supplier's operations), raw material costs can increase. When supplies are tight, raw material prices tend to rise, which has a direct impact on production costs. If a company has to find alternative sources of raw materials, transportation or procurement costs can also be higher.

2. **Delays in Production Process**

Force majeure events, such as natural disasters or transportation disruptions, can cause delays in the production process. For example, affected factories or warehouses or disrupted distribution channels may result in companies having to incur additional costs to speed up the production process (e.g., overtime or express delivery) to meet customer demand.

3. **Loss of Working Time and Labor**

If a factory or production facility is affected by force majeure, such as a fire, the company's operations may be temporarily halted. This can cause fixed costs (such as permanent employee salaries) to continue even though there is no production, increasing the cost of production per unit. On the other hand, if the company has to hire additional workers or pay overtime to meet production targets after the disruption, this can also increase labor costs.

4. **Increased Logistics and Shipping Costs**

If force majeure causes infrastructure damage or transportation disruptions (e.g., distribution lines are shut down due to a fire), the cost of shipping finished goods or raw materials may increase. Emergency shipping or using more expensive alternative transportation routes may be a factor that increases costs.

5. **Changes in Regulations and Policies**

In force majeure situations such as the fire, there are often changes in government policies that affect the industry, such as social distancing policies, taxes, or the cost of complying with health and safety protocols. PT. Jawa Lily Furniture may need to increase costs to comply with new regulations, such as providing personal protective equipment (PPE) for workers or complying with sanitation requirements.

6. **Storage and Warehouse**

If there is a long production disruption, finished products or raw materials may have to be stored longer than planned. Storage costs, whether for finished products that cannot be shipped or raw materials that are delayed in delivery, can increase, affecting overall production costs.

7. **Changes in Market Demand**

Force majeure, such as fire, can also change market demand. If demand drops significantly, PT. Jawa Lily Furniture may face overstocking or a decline in sales, which affects operating costs. On the other hand, if demand increases sharply due to certain trends or urgent needs (e.g.,

home furnishings during a lockdown), the company may have to increase production capacity at additional costs.

8. Insurance and Losses

If there is a loss due to damage to property or inventory, costs associated with insurance claims or uncovered losses can add to the costs incurred by the company during a force majeure event. This can also extend the recovery time and affect resource allocation.

- **Efficient Production Cost Management Strategy**

The furniture industry in Indonesia is increasingly facing challenges from fluctuating raw material prices and tight competition in both domestic and international markets. Some strategies that can be used by PT. Jawa Lily Furniture to manage production costs are:(Santoso, 2017)

- **Inventory Management:** Companies need to manage raw material inventory efficiently so that there is no excess or shortage that can affect the production process. The use of a good inventory management system, such as the Just in Time (JIT) system, can reduce storage costs and losses due to damaged materials.
- **Waste Reduction:** In furniture production, wood and other waste materials often occur, especially in the cutting and processing of wood. Waste reduction programs such as the use of precision cutting technology or the use of waste materials for other products can help reduce raw material costs.
- **Sustainable Utilization of Natural Resources:** In recent years, many furniture companies in Indonesia, including PT. Jawa Lily Furniture, may have started to pay attention to sustainability by using raw materials from environmentally friendly sources or implementing production systems that reduce environmental impact. Although this requires initial investment, it can open up new market opportunities, especially in export markets that are increasingly demanding environmentally friendly products.

2. Production process

The furniture production stage at PT. Jawa Lily Furniture consists of the wood processing stage, component assembly, wood surface preparation stage, and the final processing stage (finishing and coating). The wood processing stage is the initial stage in the production process at PT. Jawa Lily Furniture. Production activities carried out at this stage include wood measurement, planing, and cutting wood into furniture components. The furniture components in question are the parts of the furniture before being assembled into a complete product such as the components of cabinet furniture including doors, shelves, crowns, hulls, fences, and cabinet legs. These furniture components are then assembled into a furniture product, such as cabinets, tables, chairs, buffets, toilets, beds, and shelves. Before the finishing stage, the surface of the furniture is smoothed first at the wood surface preparation stage. The last stage is the furniture finishing and coating stage. The finishing and coating stage at PT. Jawa Lily Furniture is the stage of coating the wood surface using varnish or melamine which aims to add aesthetic value to the wood, as well as provide a layer of protection on the surface of the furniture.

The influence of production materials on product quality

PT. Jawa Lily Furniture uses solid wood as the main raw material in making furniture products. The raw material comes from community forests obtained from local wood entrepreneurs. This company differentiates the selling price of products based on two types of solid wood raw materials, namely teak wood (*Tectona grandis*) and non-teak wood

materials. Several types of non-teak wood that are commonly used for production activities by this company include bayur wood (*Pterospermum javanicum*), jengkol wood (*Archidendron jiringa*), mahogany wood (*Swietenia macrophylla*), durian wood (*Durio zibethinus*), and waru wood (*Hibiscus macrophyllus*). In addition to solid wood, PT. Jawa Lily Furniture also uses composite board raw materials (plywood) to reduce production costs. The plywood is usually obtained by PT. Jawa Lily Furniture from local building material stores. (Supriadi, 2023)

The selling price of furniture made from solid wood still tends to be expensive compared to the selling price of furniture products made from other raw materials, such as particleboard, block board, medium density fiberboard (MDF), and plywood. This is because furniture products made from solid wood are considered to have superior quality with better durability compared to furniture made from other raw materials. (Simangunsong et al., 2017)

The business activities carried out by PT. Jawa Lily Furniture implement a production by order system, meaning that production activities are only carried out when there is an order from the consumer. Consumers are usually given the freedom to choose the design of the product to be ordered, the raw materials of the product, and the type of finishing of the product. So far, most consumers of PT. Jawa Lily Furniture come from South Lampung and Bandar Lampung.

The Influence of Force Majeure on the Production Process at PT. Jawa Lily Furniture

Force majeure in the form of fire has a very significant impact on the production process at PT. Jawa Lily Furniture. The force majeure causes the production process to stop, a fire that occurs in a factory or production facility can cause the factory to stop operating for an unexpected time. Most of the machines and equipment used for production may be damaged or stopped due to fire. Such as infrastructure damage for example, if wood processing machines, cutting equipment, or furniture finishing equipment are damaged or burned, production cannot be continued. PT. Jawa Lily Furniture must wait until the facility is repaired or rebuilt before production can be started again.

Not only infrastructure damage is an example, Long Term Disruption can also destroy most of the production facilities which can cause long recovery times, resulting in decreased production capacity. And then there is Damage to Raw Materials and Finished Products, Fires that can destroy raw materials (such as wood, upholstery, or finishing materials) that are being used or stored in the factory. In addition, finished products that are almost finished or even finished can also be burned. Burned raw materials can cause Material Losses to PT. Jawa Lily Furniture which must spend more money to buy new raw materials, which can be more expensive or take longer to procure. And there are losses in finished products that result in significant financial losses and delays in delivery to customers. (Isradjuningtias, 2015)

Workforce disruptions can also result in major damage to production facilities, workers may not be able to resume their duties until the facility is repaired. If there is an evacuation or injury to workers, this can make matters worse, as a reduced workforce can hinder the smooth running of the production process. Limited workforce during the recovery process, workers may not be able to work as usual. Additionally, workers who are injured or traumatized by the fire will reduce the number of workers available to continue production. Lost Productivity If a large portion of the workforce needs to be given time to recover or if they moved to another place temporarily, this will result in decreased productivity.

Besides that, A fire in a production facility can cause delays in completing and shipping products to customers. These delays can damage customer relationships and damage a company's reputation. A fire can slow down production, preventing ordered items from being shipped on time. Customers waiting for products will experience delays, which can lead to decreased customer satisfaction and potentially loss of customers. If a company tries to catch up on the delays, they may need to use a faster shipping service or incur additional

costs to expedite the delivery of delayed products.

Fires that cause damage to facilities and raw materials will increase the costs that must be incurred by the company, which has the potential to increase production costs. After the fire, PT. Jawa Lily Furniture will spend money to repair production facilities or replace damaged machines. This will affect the company's finances in the short term. Additional Raw Material Procurement Costs: The company must purchase new raw materials to replace the burned materials. If the supply of raw materials is disrupted or the price of raw materials increases, the cost of procuring raw materials will also increase. In addition to the cost of repairing facilities, the company must also spend cleanup costs to restore the area affected by the fire and ensure that the place is safe for reuse.

In an emergency situation after a fire, PT. Jawa Lily Furniture may need to speed up the production process to catch up on delays or meet customer demand. This can result in decreased quality control, which impacts product standards. If production is accelerated to make up for lost time, the company may struggle to maintain the quality standards of the furniture products produced. Products may be defective or not meet customer expectations. Rushing the process can increase the likelihood of defective products or requiring rework, which will extend production time and increase production costs.

After a fire, the company needs to spend time and resources to restore production processes and rebuild the facility. This process requires additional costs and time, and will affect the smooth operation in the short term. If the fire causes damage to the facility, PT. Jawa Lily Furniture must renovate or rebuild the burned part of the factory. This takes additional time and costs that can extend the period when production cannot run at full capacity. As part of the recovery, the company may need to invest more in better technology and safety systems to prevent similar fires in the future.

A fire that causes significant disruption to production and delivery could also impact customer confidence in PT. Jawa Lily Furniture. If customers feel disadvantaged by late delivery or compromised product quality, they may switch to competitors. This could lead to decreased revenue and reputational damage. PT. Jawa Lily Furniture may also face impacts to business relationships with suppliers or distribution partners that depend on production and delivery times.

After a fire, a company needs to evaluate and improve its security systems to prevent similar incidents. This could include installing better fire detection systems, employee safety training, or purchasing more sophisticated firefighting equipment.

The following is a description of the facts of the incident and the consequences of the fire.

At the end of November 2020, a fire broke out at the warehouse of PT. Jawa Lily Furniture, a wood factory in Sepuhgembol Village, Wonomerto District, Probolinggo Regency, East Java. The fire incident was purely due to a malfunctioning tool, the cause was an electrical short circuit, not due to worker negligence. The fire is suspected to have originated from an electrical short circuit in one of the machines. The large number of flammable materials made the fire grow quickly, such as thinner for rubbing production results, cardboard packaging, and wood production materials. This fire resulted in two employees dying because they were trapped in the fire at the time of the fire and caused the factory to be temporarily closed. (Murdiyanto, 2020)

As a result of the incident, the company suffered losses of tens of billions. Public Relations of PT Jawa Lily, Alfin Hidayati said, the estimated loss due to the fire ranged from 15 to 20 billion rupiah. Because the fire that occurred in Warehouse C finishing, burned the wood polishing machine. Finished materials ready for export, as well as the warehouse building. Material losses due to the fire, the company also suffered a loss of income that occurred around 50% of the company's total income that cannot be mentioned, and clearly the company had a little difficulty in meeting the target demand that had been received. The

cause of the fire was due to an electric current leak in the emergency stop cable, which was in the Warehouse C Finishing section, one of the workers emphasized that the fire was purely due to a tool that was not functioning properly, not due to worker negligence.

Losses that occurred due to the fire at PT Jawa Lily Furniture East Java include:

1. Human Loss
 - Loss of life of two employees
 - Injury to another employee
 - Psychological trauma for employees and victims' families
 - Loss of trained human resources
2. Material Loss
 - Damage to factory facilities and equipment (buildings, machinery, equipment)
 - Loss of raw materials and products (wood, chemicals)
 - Repair and reconstruction costs
 - Loss of finished and semi-finished products
 - Damage to factory systems and infrastructure
3. Operational Loss
 - Temporary factory closure
 - Loss of productivity and income
 - Impact on product supply and distribution
 - Delay in product delivery
 - Potential loss of contracts and business opportunities
4. Financial Loss
 - Material losses and repair costs
 - Compensation costs for the victim's family
 - Potential decline in stock value and company reputation
 - Attorney fees and litigation
 - Insurance premium increase
 - Revenue loss due to factory closures
 - Recovery and reconstruction costs

And efforts to restore factory operations back to normal in January 2021, the company is still re-ordering a number of machines that burned in the finishing section. As well as anticipating a similar incident from happening again, the factory has also collaborated with a number of related parties. Starting from the Department of Manpower, the Police, and other agencies. Efforts to equip safety equipment and disaster management strategies have also been prepared again.

CONCLUSION

Based on the explanation given, we can conclude that PT. Jawa Lily Furniture faces various obstacles in the production process that can affect production costs. These obstacles can come from internal and external factors, and can cause loss of raw material costs and increase factory overhead costs. Production costs consist of fixed and variable costs, which are important for budget planning and determining selling prices. The company is committed to quality and innovation, but faces challenges such as effective management and fire incidents that affect operations. In addition, the implementation of efficient technology and cost management strategies can improve production efficiency, despite challenges such as fluctuations in raw material prices and tight competition..

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