

# BDM PROJECT FINAL REPORT



## Optimization of Finished goods Dispatches from Plant

**Rakesh Bhattacharjee**

**Roll No. -\*\*\*\*\***

**\*\*\*\*\*@ds.study.iitm.ac.in**

### **A. Executive Summary-**

Logistics is an essential component of supply chain management. We can divide logistics into Inbound & outbound logistics- Inbound logistics brings supplies or materials into a business, while outbound logistics deals with moving finished goods and products out to customers. Both focuses heavily on the transporting of goods. But inbound is all about receiving, while outbound focuses on delivery.

VVF ((India) Ltd is dealing with Oleo Chemicals –used in Home & Personal care, Paints & Coating, Oil field, Tyre etc. in bulk quantity. Storing such huge quantity at Plant is not feasible for both customer or manufacturer, as it is a continuous plant. Prompt dispatch of material is very important for VVF, to avoid space constraint, maintain lean inventory and ensure timely delivery of materials. If any Vehicle/ Tanker stays in plant more than the stipulated time, VVF has to pay detention charges to transporter – which is cost to the company. As detention charges are rising & customer's complaints are increasing , they are trying figure out the reason behind the delayed dispatches in plant and the concerned departments/operations causing the inconsistency. Post assessment of the impact of the detention charges due to delay in release of vehicle/tanker form plant and analysis of the reasons for delay in dispatches, the, existing SOP modification may be taken up with management is presently using Transport Management System (TMS) to track outbound vehicle movement, with assigned role of each concerned department for smooth operation, reduced error and optimized dispatch process in Plant.

## B. Detailed Explanation of Analysis Process/Method:

The analysis process for a project aimed at identifying the reasons behind delays in dispatching goods from a plant and finding appropriate solutions to reduce the turnaround time of vehicles/tankers, minimize detention charges and ensure faster dispatch of goods. The approach used for this project involved a mixed-method approach which included both qualitative and quantitative data.

To gather qualitative data, I contacted the Supply Chain manager to understand the overall operational structure of the plant, the standard operating procedures (SOPs) laid down for the plant and each operation phase, and the potential causes of disruptions. By speaking to the Supply Chain manager, I gained an in-depth understanding of the types of materials and SKU types, their basic characteristics, and the type of movements required for each type of good. Additionally, I received information regarding the types of documents required during the movement of vehicles inside the plant for each phase.

To gather quantitative data, I collected dispatch data from the plant for the last two years from SAP. The record contained seventeen columns, including material description, vehicle details, vehicle number, gate-in date and time, net weight of the goods, total time taken by each phase, and the overall total time spent by the vehicle in the plant. Also details are shared in Below :-

- **META DATA :**

Below mentioned steps and responsibilities of concerned departments are defined for outbound Vehicle/Tanker and description of all Columns:

	<b>Department</b>	<b>Tanker Load</b>	<b>Packaged Load</b>
Phase 1	Logistic	TMS Creation	TMS Creation
Phase	Quality Control	Assign Material	Assign Material
Phase 3	Security	Vehicle IN	Vehicle IN
Phase 4	Quality Control	Tanker Cleaning	
Phase 5	Quality Control	Tanker Inspection	
Phase 6	weigh Bridge	Tare Weight	Tare Weight
Phase 7	Tank Farm	Material Loading	Material Loading
Phase 8	Quality Control	Sample Receipt	
Phase 9	weigh Bridge	Gross/Net Weight	Gross/Net Weight
Phase 10	Quality Control	Excise Total Seal	
Phase 11		Adhoc	
Phase 12	Quality Control	Sample Report	
Phase 13	Excise Team	Documentation	Documentation
Phase 14	security	Vehicle Out	Vehicle Out

<b>Columns Name</b>	<b>Description</b>
Material Description	Name of All the Products serviced from the Plant -total 695 SKU's
Vehicle Description	Total 7 Different Kind of Vehicle are used. For Bulk Items Tanker,Pitch Dispatch ,Iso Container, Flexi Container are used and for Packaged Material Truck , 20'ft Container, 40'ft Container are used.
Tanker No	Vehicle Number
Vehicle In Date	Entry Date of Each Vehicle
Vehicle In Time	Time of Entry of Each Vehicle

Net Weight	Net Weight of Material
Diff 03->04	Total Time taken from Security Check in to Tanker Cleaning for Bulk Load
Diff 04->05	Total Time taken from Cleaning to completion of Cleaning Inspection for Bulk
Diff 05->06	Total Time taken from Tanker Cleaning Inspection to weigh Bridge for Bulk and Truck Security check in to weigh Bridge for packaged Material - for Tare weight
Diff 06->07	Total Time taken from Tanker weighment to completion of Material Loading
Diff 07->08	Total Time taken from completion of Material Loading to Sample receipt for bulk load for QC Analysis
Diff 08->09	Total Time taken from completion of Sample Analysis to completion weighment for bulk load- for Packed from completion of Material Loading to Weighment - Gross/Net weight
Diff 09->10	Total Time taken from completion weighment to tanker Sealing for Bulk load
Diff 10->11	Total time taken from Phase 10 to completion of Nitrogen blanketing- its applicable for limited products
Diff 11->12	Total time taken from sealing to completion of QC report for Bulk loads
Diff 12->13	Total time taken from QC report to Documentation for Bulk loads, and for packaged load its from weigh Bridge to Documentation
Time In Factory	Total time spent by a vehicle in a plant

By utilizing a mixed-method approach, I was able to gain both qualitative and quantitative insights into the operation of the plant, enabling them to identify the root causes of delays and suggest appropriate solutions for optimization. Additionally, I was able to identify the changes required in SOPs for each phase to ensure efficient dispatches of goods and reduce turnaround time and detention charges. Details are shared in below.

The first objective in conducting the TMS analysis was data cleaning and wrangling. This process involved preparing the collected data in a suitable format for further analysis. I took the necessary steps to ensure that all data was cleaned and organized appropriately.

- As an example of the cleaning process, I provided a code snippet where I converted all string data into a Datetime object in Python.

```
def convert_time_string(time_string):
    days, hours, minutes, seconds = map(int, [x.split('-')[0] for x in time_string.split(',')])
    td = pd.Timedelta(days=days, hours=hours, minutes=minutes, seconds=seconds)
    result = '{ } days { :02d } : { :02d } : { :02d }'.format(td.components.days, td.components.hours, td.components.minutes, td.components.seconds)
    return result

ff['Diff 03->04']=df['Diff 03->04'].apply(convert_time_str)
df['Diff 04->05']=df['Diff 04->05'].apply(convert_time_str)
df['Diff 05->06']=df['Diff 05->06'].apply(convert_time_str)
df['Diff 06->07']=df['Diff 06->07'].apply(convert_time_str)
df['Diff 07->08']=df['Diff 07->08'].apply(convert_time_str)
df['Diff 08->09']=df['Diff 08->09'].apply(convert_time_str)
df['Diff 09->10']=df['Diff 09->10'].apply(convert_time_str)
df['Diff 10->11']=df['Diff 10->11'].apply(convert_time_str)
df['Diff 11->12']=df['Diff 11->12'].apply(convert_time_str)
df['Diff 12->13']=df['Diff 12->13'].apply(convert_time_str)
df['Time In Factory']=df['Time In Factory'].apply(convert_time_str)
```

This was done to ensure that the date and time data collected was in a consistent format that could be used for analysis. Overall, my approach to data cleaning and wrangling suggests that they were thorough in their efforts to ensure that the data collected was accurate and usable for further analysis. This step is critical in ensuring that the subsequent analysis is meaningful and relevant to addressing the stated problem.

- In Next step I focused on the Types of Vehicle columns, there are seven different kinds of vehicles that are operated, and they are used depending on the type of material being transported.

For bulk items, four types of vehicles are used. Tankers are used for the transportation of liquids in bulk quantities. Pitch dispatch vehicles are used for transporting molten pitch, which is a type of low margin residue product. ISO containers and flexi containers are used for the transportation of bulk goods.

For packaged materials, three types of vehicles are used. Trucks are used for the transportation of small packaged goods 25 KG & 50 KG bags & 180 KG,250 KG HDPE Drums. 20'ft containers and 40'ft containers are used for the transportation of packaged goods, such as pallets or crates.

It is important to understand the different types of vehicles used in transportation as they have different transportation requirements and capabilities. For example, tankers may require specialized equipment for loading and unloading, while containers may require specific handling and transportation methods. By understanding the specific requirements of each vehicle type, it is possible to optimize the transportation process and ensure that goods are transported safely and efficiently.

In this step I added a new column called '**load\_type**' to the dataset. This was done by converting the 'Vehicle Description' column into two categories - '**Tanker Load**' and '**Packed Load**'.

To achieve this, I used a Python code snippet to perform the necessary data transformation. The snippet would have taken the values in the '**Vehicle Description**' column and identified those that corresponded to tankers and those that corresponded to packed loads. This information was then used to create the new '**load\_type**' column, which could be used in subsequent analysis.

```
def binning(i):  
    ...if i== 'PITCH DESPATCH' or i== 'FRESH TANKER' or i== 'FLEXY CONTAINER' or i== 'ISO CONTAINER':  
    .....return 'Tanker_load'  
    ...else:  
    .....return 'Packed_load'..
```

```
df['load_type']=df['Vehicle Description'].apply(binning)
```

- Under this step two additional columns that were added to the dataset to better understand the impact of overall plant operation.

The first column, called '**Time\_Gatein**', was created by binning the '**Vehicle In Time**' into three categories. The categories are '**Night**', which includes vehicles that entered the plant between 12 o'clock midnight to 10 AM, '**Day**', which includes vehicles that entered between 10 AM to 6 PM, and '**Evening**', which includes vehicles that entered between 6 PM to 12 o'clock midnight. This categorization helps to understand the impact of entry time on overall plant operation. For example, if there are a high number of vehicles entering during the 'Day' category, it may indicate that the plant is more efficient during those hours.

The second column, called '**Per\_Hrs>Loading**', was created by dividing the '**Net Weight**' with the '**Time In Factory**' with the help of Excel. This column helps to understand the efficiency of the plant and how much quantity is getting loaded in an hour. For example, a higher value in this column may indicate that the plant is more efficient in loading the goods.

Overall, the addition of these columns provides a more detailed view of the plant operation and can help to identify areas for improvement. By understanding the impact of entry time on plant operation and the efficiency of the loading process, it is possible to optimize the plant's operation and improve overall performance.

Overall, my approach to data preparation suggests a thorough and thoughtful approach to conducting a TMS analysis. By taking the necessary steps to clean, organize, and transform the data, positioned me to conduct a detailed analysis that will lead to actionable insights and recommendations.

- In this step, aim to understand the contribution of Packed Load and Tanker Load in total business volume and the average time taken by a vehicle to dispatch a Packed Load and Tanker Load vehicle in the last two years and plot a graph with the help of Excel & Tableau. This information is important to get a better understanding of the business weightage and importance of each type of load for future actions.

To understand the contribution of Packed Load and Tanker Load in total business volume, I needed to analyze the total volume of goods dispatched from the plant in the last two years and classify them into Packed Load and Tanker Load, then calculated the percentage contribution of each type of load to the total business volume. This information will provide insights into the importance of each type of load and help in planning and optimizing future dispatches and To calculate the average time taken by a vehicle to dispatch a Packed Load and Tanker Load vehicle, I separated the data into Packed Load and Tanker Load and calculate the average time taken by each type of load. This information will provide insights into the efficiency of dispatches for each type of load and help in identifying areas for improvement.

- Under this step, my aim to figure out the product-wise major volume contributor, the average time spent by a vehicle for a respective product, and its overall impact. This information is important to identify the products that are major volume contributors and the time spent on them, which will help in optimizing the plant's operation.

To identify the product-wise major volume contributor, I plotted & calculated the total volume dispatched for each product and identify the top contributors with the help of Excel & Tableau . This information will provide insights into the products that are major volume contributors and help in planning and optimizing their dispatches.

To calculate the average time spent by a vehicle for a respective product, I need to analyze the dispatch data for each product and calculate the average time taken by a vehicle to dispatch that product. This information will help in identifying the products that are taking more time and require optimization.

Finally, to understand the overall impact of the product-wise volume contributor and average time spent by a vehicle for a respective product, I need to combine the insights obtained from the previous steps. By doing so, I can identify the products that are major volume contributors and also taking more time to dispatch. These products will require more attention and optimization to improve the overall performance of the plant.

Overall, by identifying the product-wise major volume contributor, the average time spent by a vehicle for a respective product, and its overall impact, I can make informed decisions and take actions to optimize the plant's operation and improve overall performance.

- Apart from analyzing the product-wise volume contributor and the average time spent by a vehicle for a respective product, I also needed to analyze the overall phase-wise time taken by a vehicle for the last two years to identify if there is any issues.

I analyzed the dispatch data and calculate the time taken for each phase, including loading, unloading, and documentation. I can then identify the phases that are taking more time and require optimization.

Furthermore, I checked the number of rejected vehicles and whether there was any trend. By analyzing the dispatch data, I calculated the number of rejected vehicles for the last two years and identify any trend. This information will help in identifying the possible reasons for vehicle rejection and take appropriate actions to minimize it.

In summary, analyzing the overall phase-wise time taken for the last two years and identifying any issues, as well as checking the number of rejected vehicles and whether there is any trend, will provide insights into the areas that require optimization and help in improving the overall performance of the plant.

## C. Results and Findings:

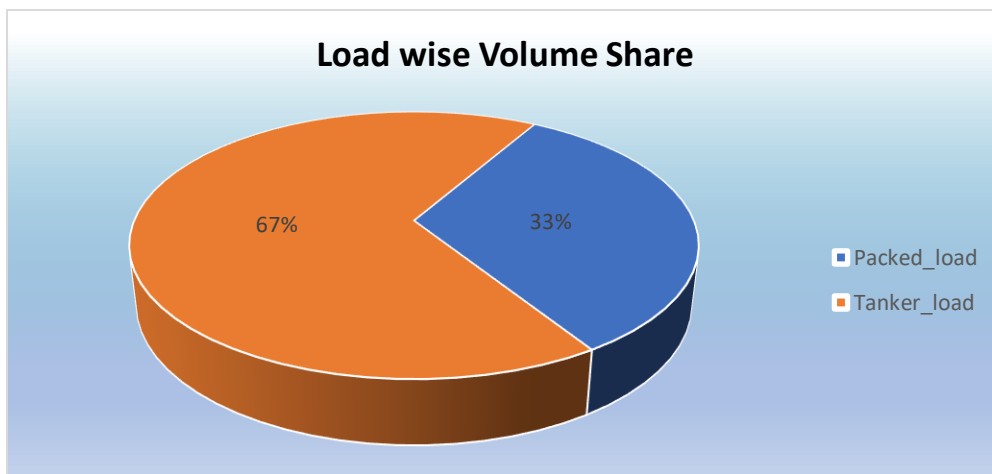


Fig1: Pie Chart of Business share of Packed Load & Tanker Load by volume.

### Bar Chart of Year wise /Load type wise Avg. Time spent by a vehicle

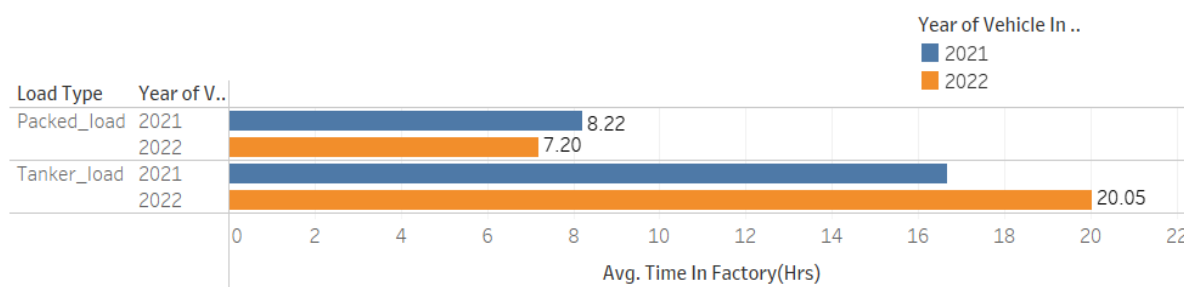
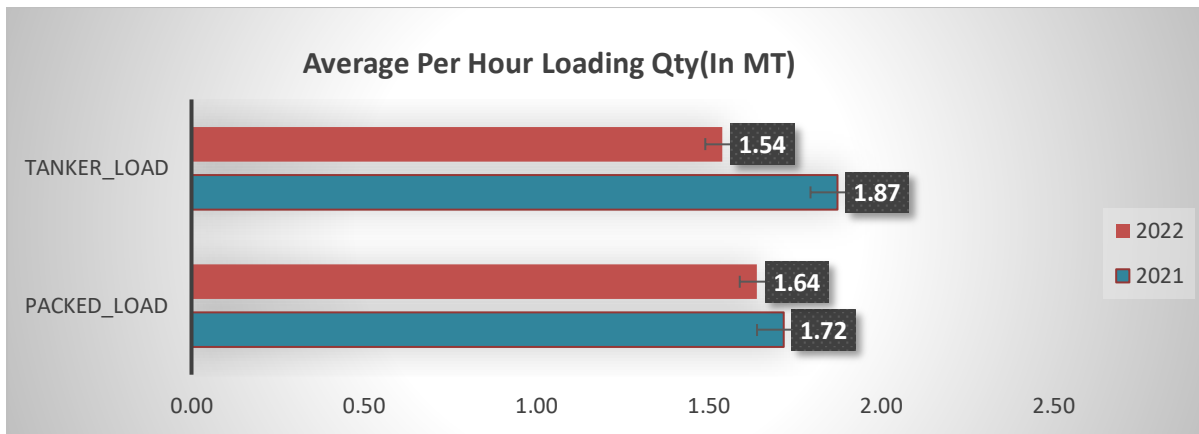
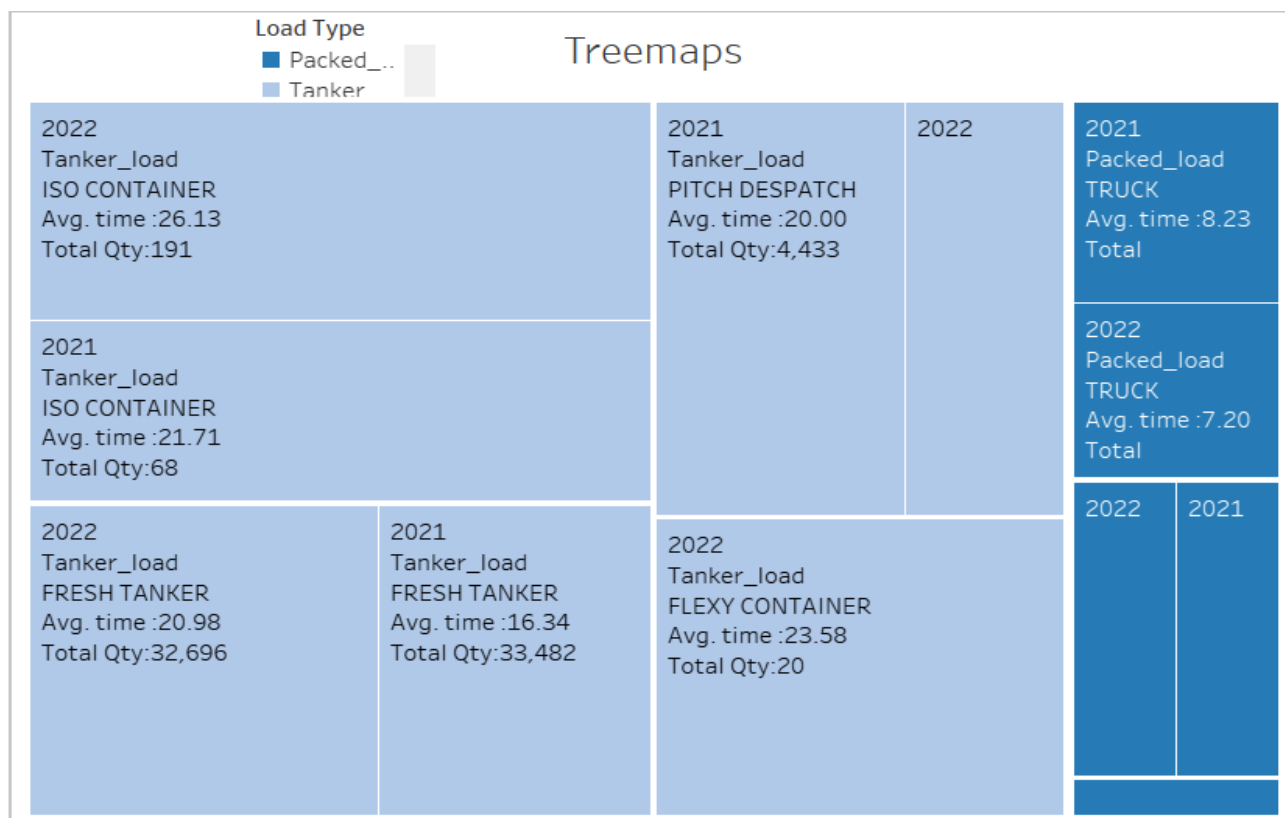


Fig2: Bar Chart of year wise/Load type wise Avg. time spent by a Vehicle.



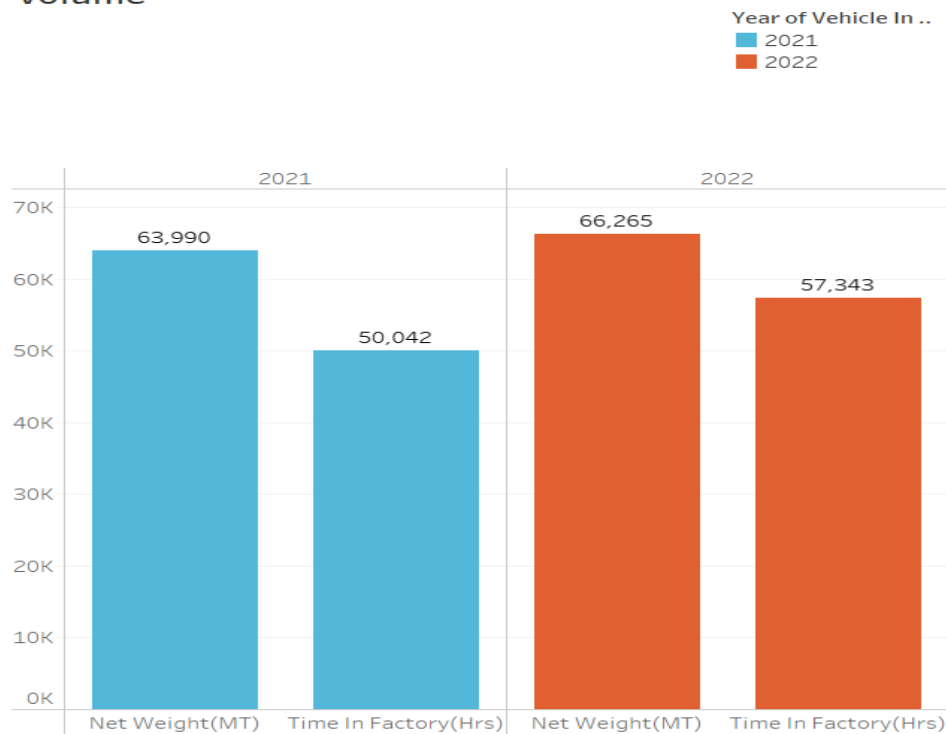
**Fig3: Bar Chart of year wise/Load type wise Average Per Hour Loading Qty(In MT).**

Based on Fig1, it clearly visible that Bulk pack is the major volume contributor, and Based on the Fig.2 & Fig3. analysis , it seems that the average dispatch time for bulk loading has significantly increased by 21%, while the dispatch time for packed material has decreased. Additionally, the overall average per hour loading volume for both types of loading has decreased and for bulk load it decreased by almost 18% and resulting in delays in dispatches.



**Fig4: Treemaps of analysis of average time required(in Hrs) by a vehicle for Packed Load & Bulk load – alone with total Dispatch qty in MT .**

## Year Wise total Vehicle Hours & Total Business volume



**Fig5: Bar chart of year wise analysis of Total Vehicle Hours & Total Business Volume**

From Fig 4 & 5 it appears that the business volume has increased by 3.5% year on year, while the total hours spent by all the vehicles inside the plant have increased by 15%. This suggests that there are inefficiencies in the plant's operations that are causing the increased time spent by vehicles.

Additionally, the Treemap analysis indicates that the efficiency of bulk materials dispatches has significantly decreased. This is a key area for improvement, as bulk materials likely represent a significant portion of the plant's overall business volume.

To address these issues, it may be helpful to conduct a more detailed analysis of the plant's operations, focusing on areas where bottlenecks or inefficiencies may be causing delays.



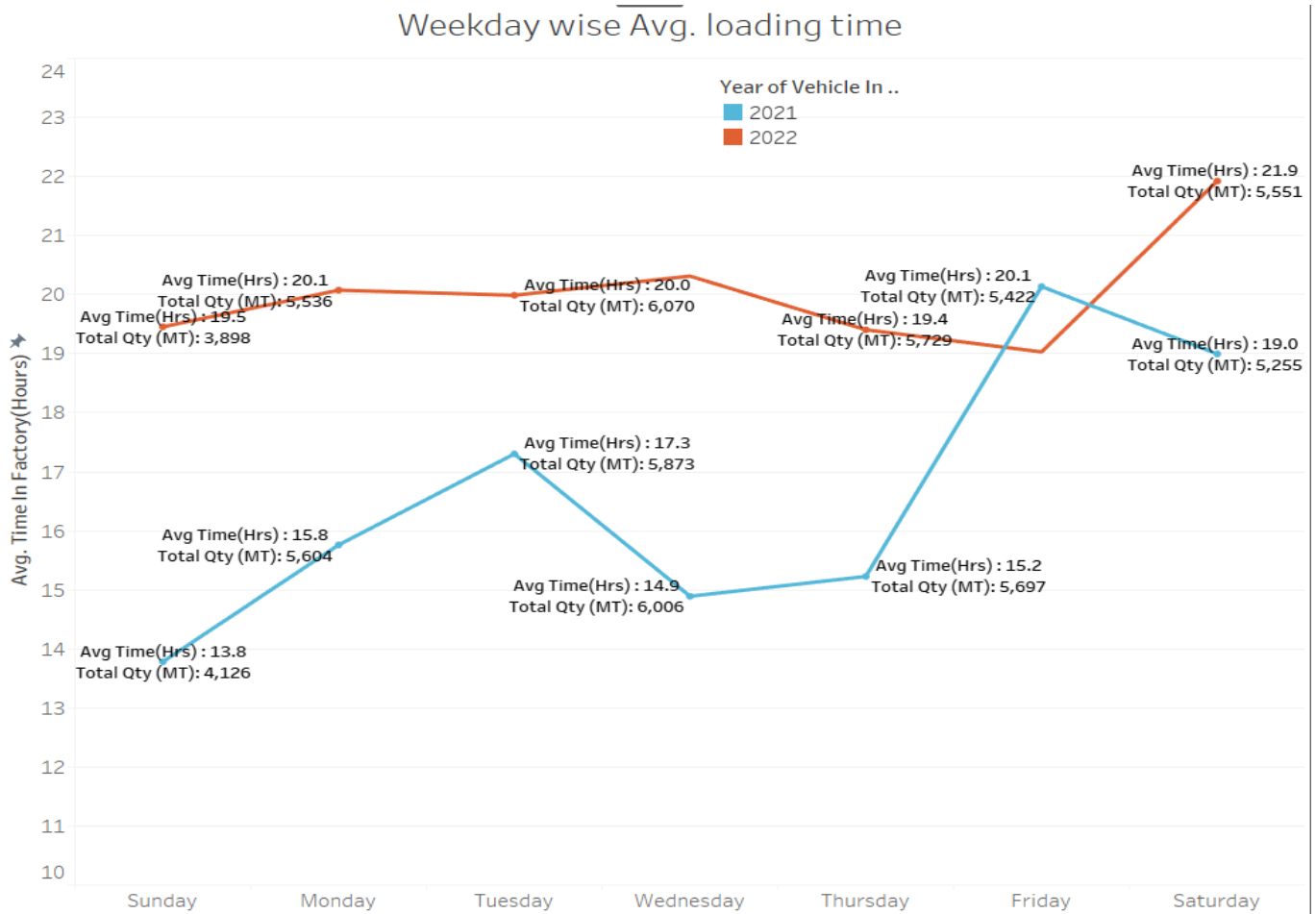


Fig6: Line chart of weekday wise average Time spent a vehicle inside the Plant.

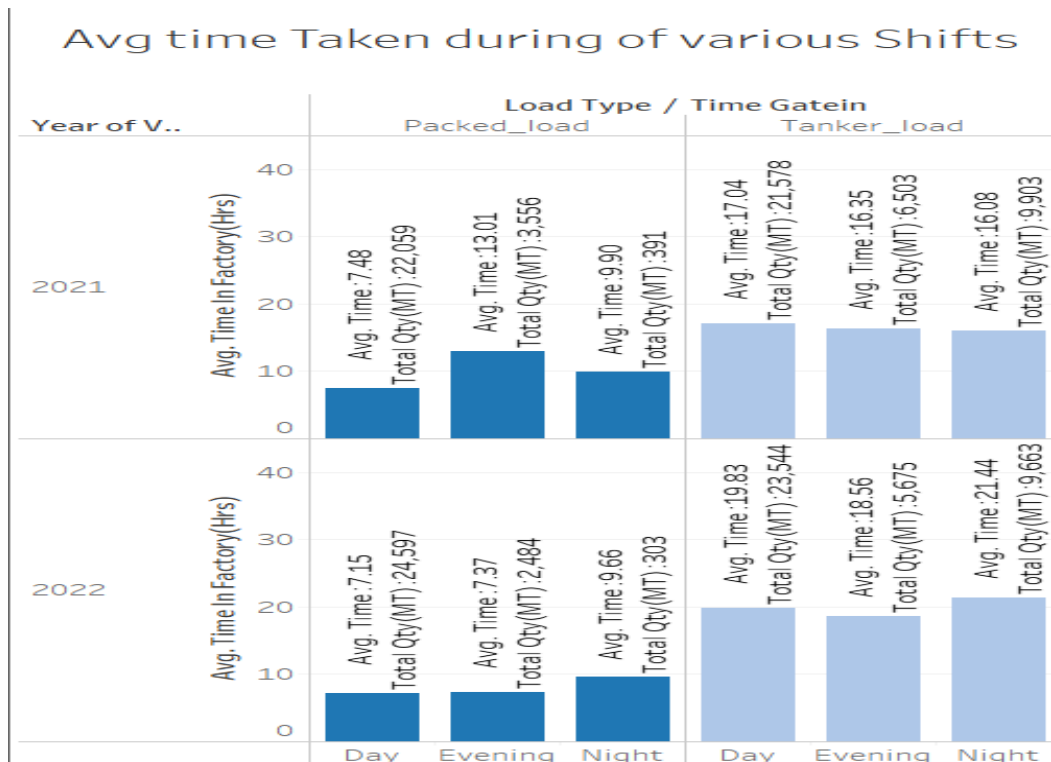


Fig7: Bar chart analysis of Average time taken by a vehicle during various shifts .

From Fig 6&7, it appears that the weekday-wise dispatch capacity for bulk materials has decreased significantly, and that this is likely due to increased dispatch times during both day and night shifts and packed load trend remains stable .

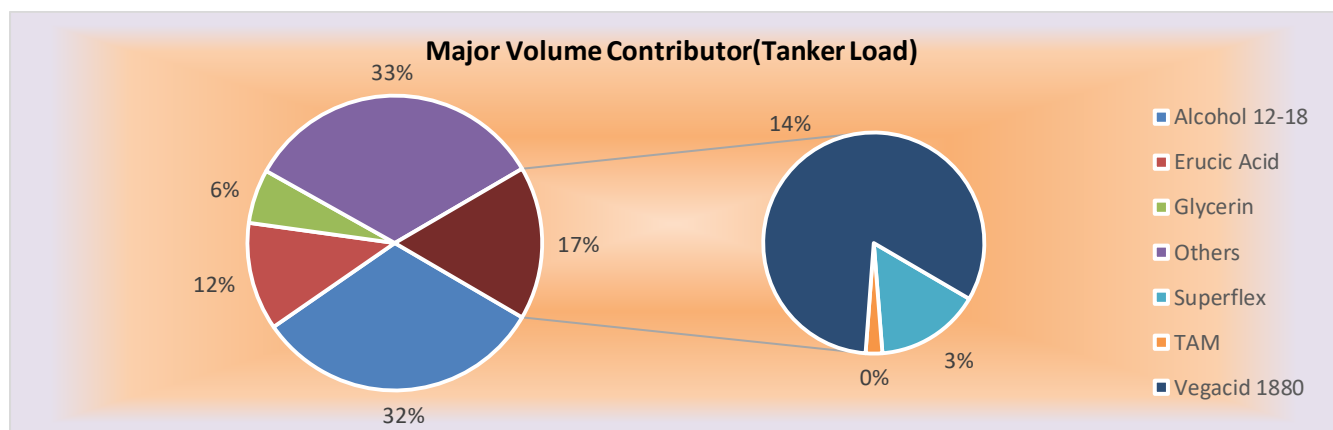


Fig8: product wise Major volume contributors.

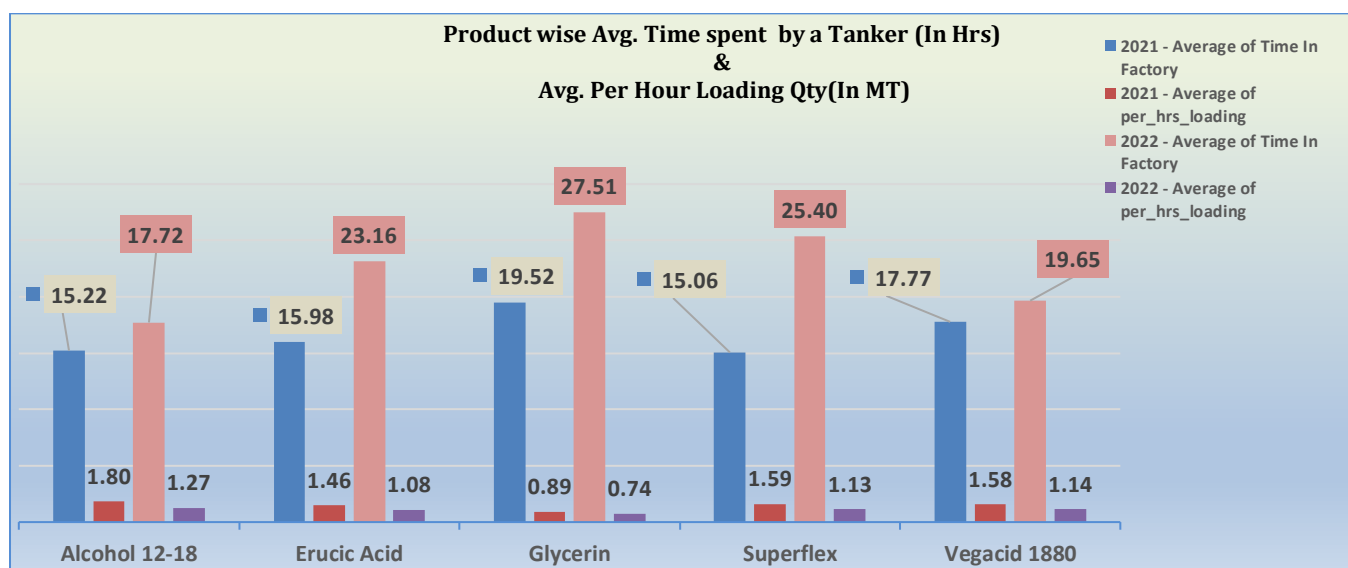


Fig 9: Bar Chart of Product wise Avg. Time spent by a Tanker (In Hrs) & Avg. Per Hour Loading Qty(In MT)

From Fig 9 Its clear visible that out of top 5 Volume contributor products , per hour loading qty significantly decreased for all the major products .

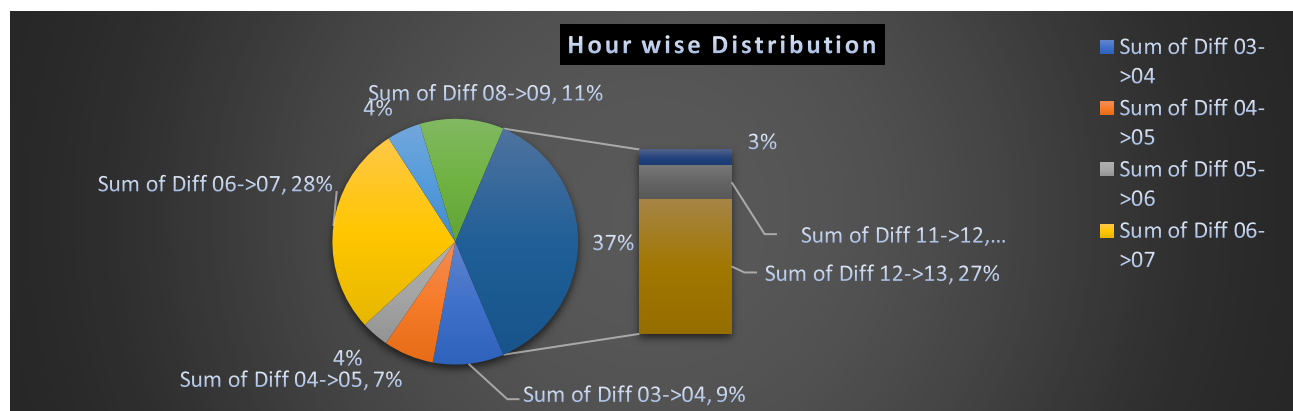
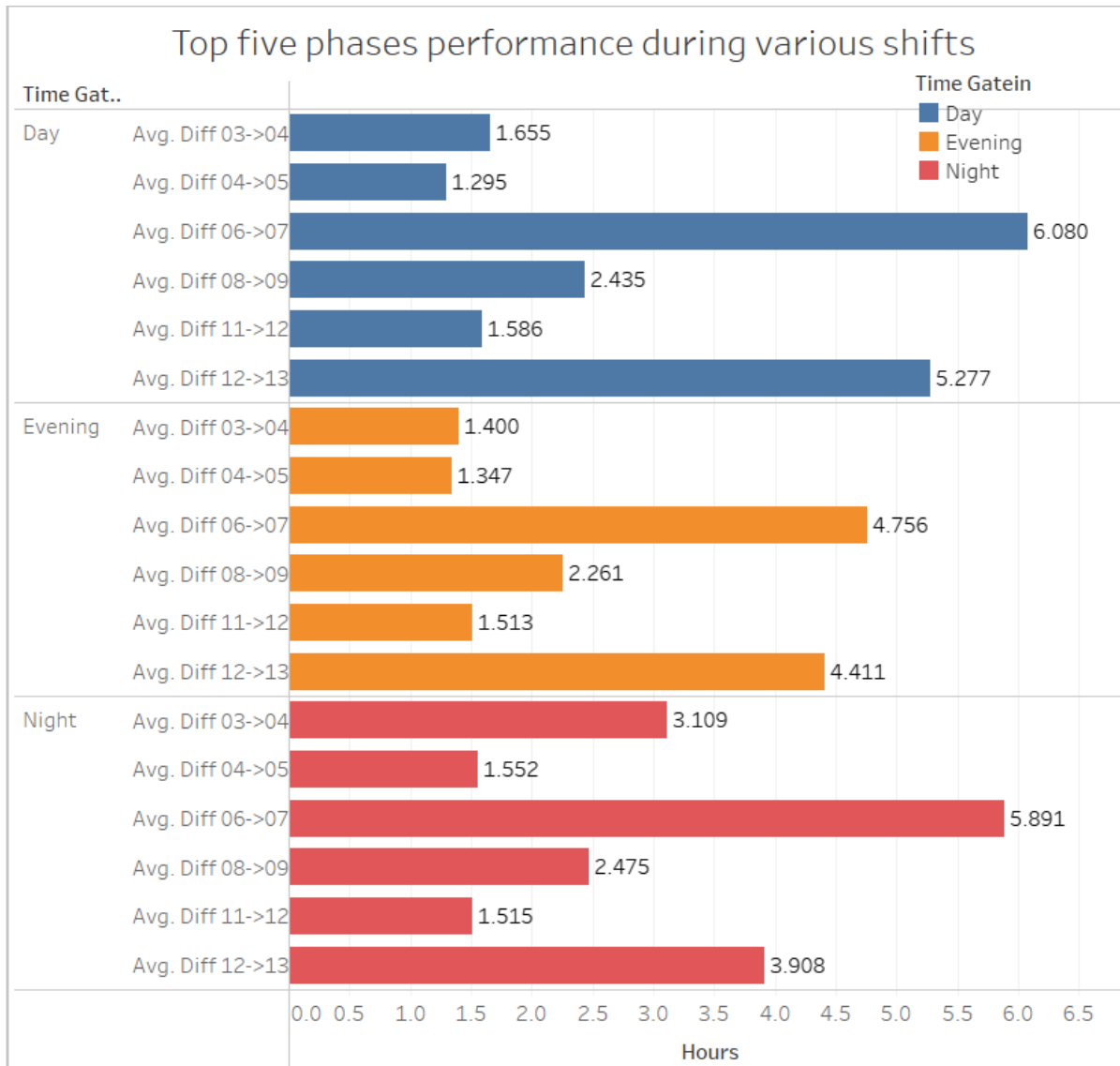


Fig10: Pie chart of share of total hours of each Phase.

In Fig10, I have highlighted the top six processes which are consuming almost 89% of total time spent by a vehicle for Bulk Loading.



**Fig11: Bar chart of Top Five Phases during Day, Evening & Night shifts .**

It appears that the efficiency of operations is decreasing during both day and night shifts, particularly in phases 6 and 7. There is an unusual spike in (Phase 3-4 ) Total Time taken from Security Check in to Tanker Cleaning for Bulk Load during Night shift ,(Phase 6-7) Total Time taken from Tanker weighment to completion of Material Loading significantly high during Day and night shift and (phase 12-13) is high during day shift entries .

## Bar Chart of Year wise /Product wise Avg Time spent in factory

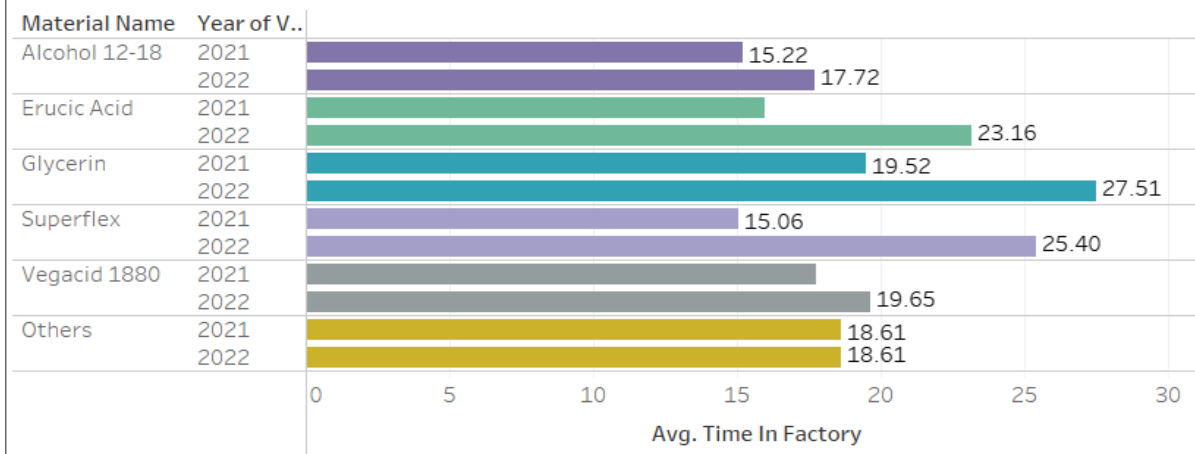


Fig12: Bar Chart of Year wise /Product wise Avg Time spent by a vehicle in factory for top bulk products

## Packed bubble chart for Top Five Products

Avg. dispatch Time of a Vehcile

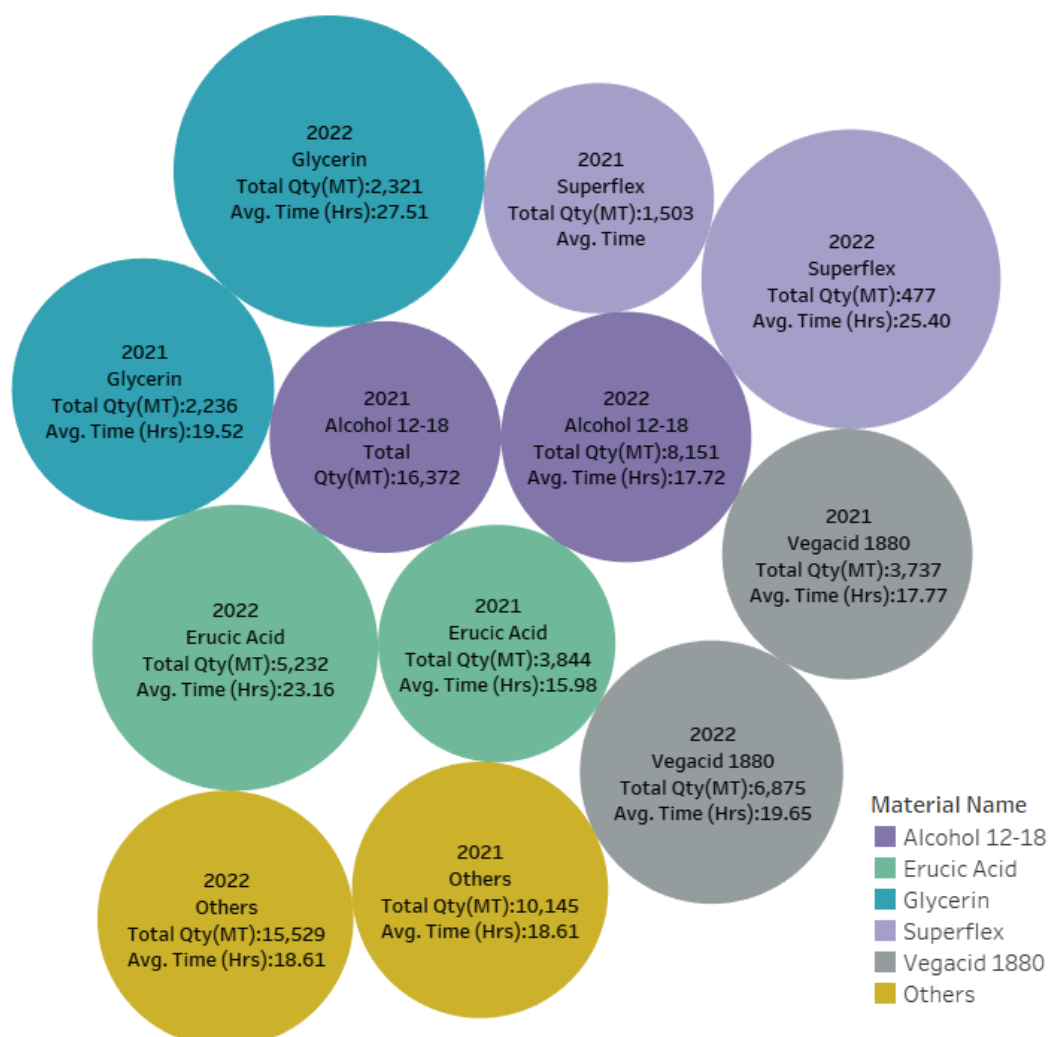
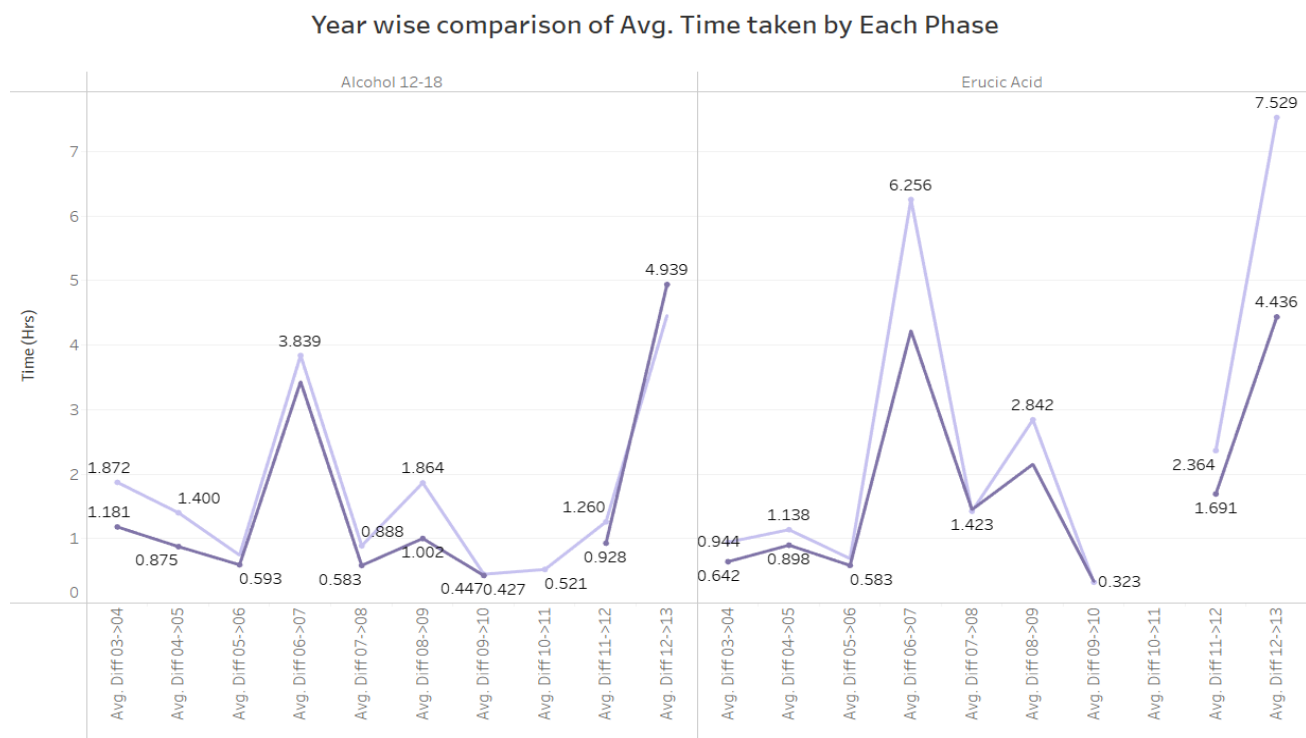
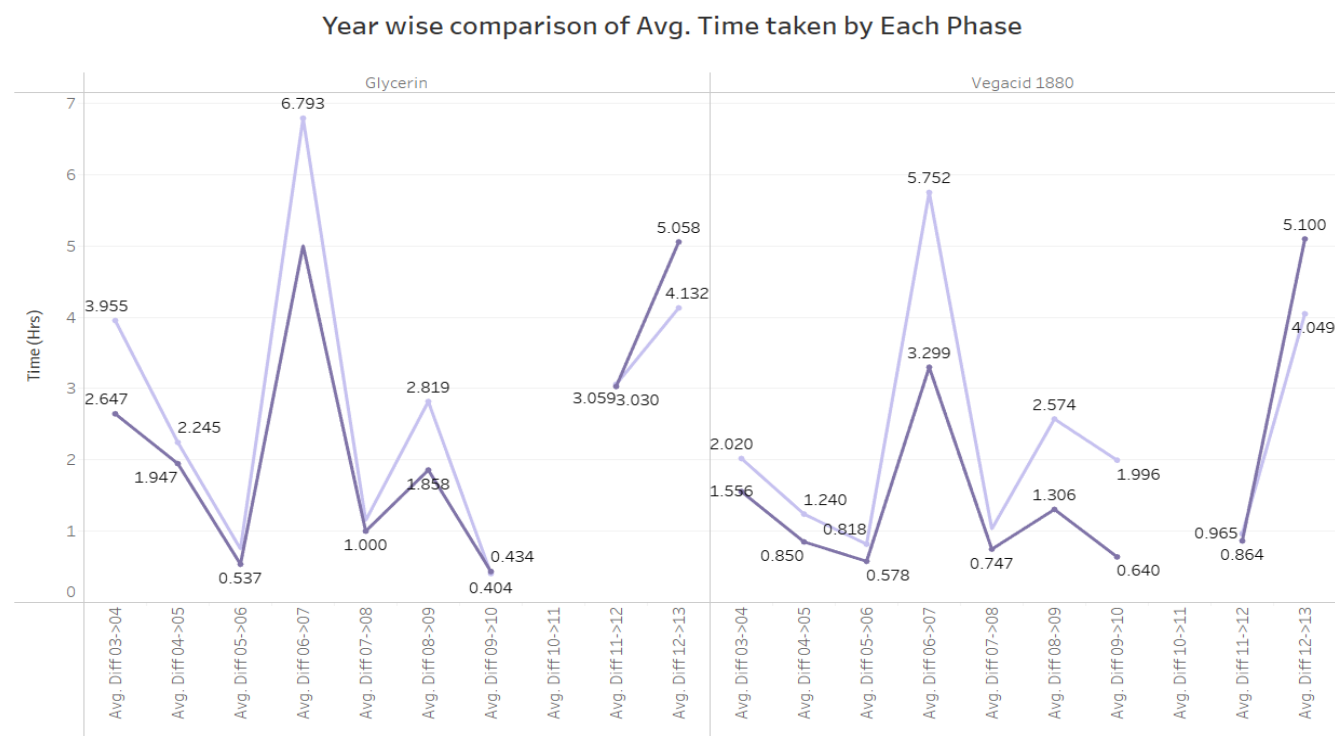


Fig13: Packed bubble chart for Top Five Products including Average dispatch Time of a Vehicle of the respective products.

From Fig 12 & 13 , It is apparent that the average dispatch time for high-margin & high volume products has significantly increased, while the average dispatch time for low-margin products has remained unchanged despite a 50% increase in volume.

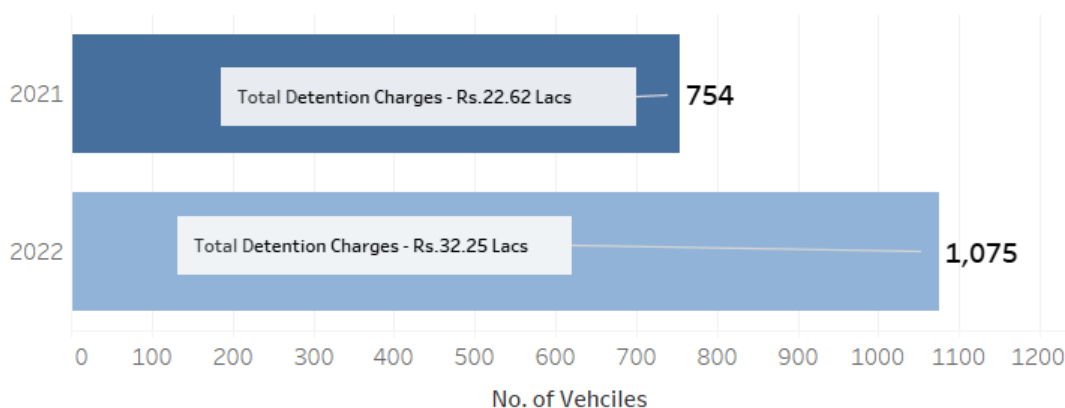


**Fig14: Line Chart of Year wise comparison if Average time taken by each phase for Alcohol 12-14 & Erucic Acid .**

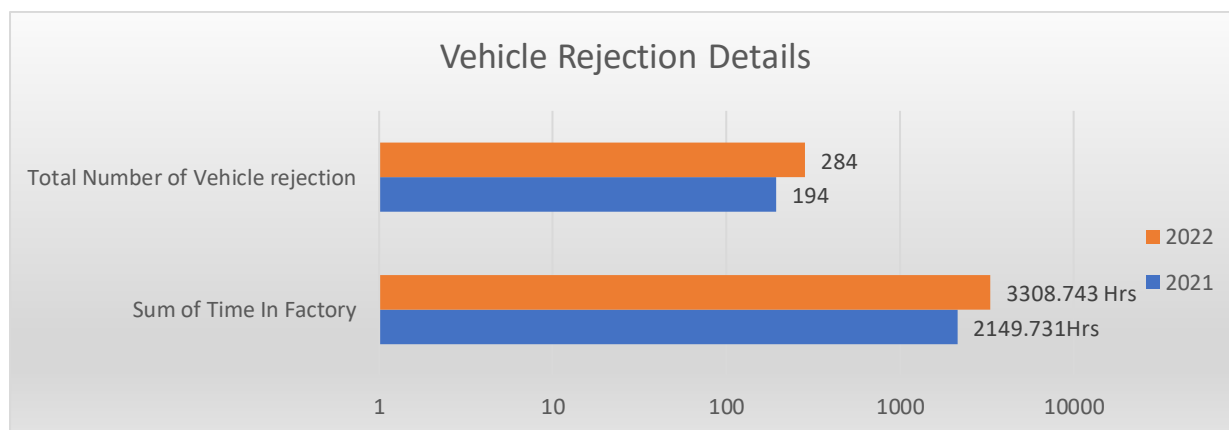


**Fig15: Line Chart of Year wise comparison if Average time taken by each phase for Glycerin & Vegacid .**

Year wise data of No of Vehicle spent more than 16 hrs time in Plant



**Fig15: Year wise data of No of Vehicle (Tanker) spent more than 16 hrs. time in Plant and Overall detention charges paid to the Transporters (Rs. 3000/- detention charge of per vehicle)**



**Fig16: Year wise comparison of No of Vehicles rejected by the plant and Total Hours Lost due to rejection.**

## D. Interpretation of Results and Recommendation:

### Important observations drawn from the above figures:

- Bulk pack is the major volume contributor, and the average dispatch time for bulk loading has significantly increased by 21%, while the dispatch time for packed material has decreased slightly. Additionally, the overall average per hour loading volume for both types of loading has decreased, and for bulk load, it decreased by almost 18%, resulting in delays in overall dispatches. This suggests that there may be inefficiencies in the loading process that need to be addressed.
- The business volume has increased by 3.5% year on year, while the total hours spent by all the vehicles inside the plant have increased by 15%. This indicates that there are inefficiencies in the plant's operations that are causing increased time spent by vehicles.

- The weekday-wise dispatch efficiencies for bulk materials have decreased significantly year on year, likely due to increased dispatch times during both day and night shifts, while dispatches for packed load materials remain stable. This suggests that there may be bottlenecks or inefficiencies in the dispatch process that need to be addressed.
- The operational capabilities during both day and night shifts have dropped significantly, particularly in phases (06 -07). There are unusual spikes in the time Total Time taken from Tanker weighment to completion of Material Loading time is significantly high during Day and night shift and (phase 12-13) is high during day shift entries .
- The average dispatch time for high-margin and high-volume products has significantly increased, while the average dispatch time for low-margin products has remained unchanged despite a 50% increase in volume. This suggests that there may be inefficiencies in the dispatch process for high-margin and high-volume products that need to be addressed.
- In product-wise analysis, the average time for phase (3-4) has increased significantly for all major products, and for phase (06-07), the overall average time increased except for alcohol products. There are also spikes in phase (08-09) and phase (12-14).
- Based on the given data, it is found that the vehicle detention charge is Rs. 3000/- per vehicle if a vehicle spends more than 16 hours in the plant. After analyzing Fig 15, the year-wise data of the number of vehicles (tankers) spent more than 16 hours in the plant and the overall detention charges paid to the transporters, it is found that the total detention charge paid to the transporters is 32.25 Lacs, which is 43% higher than the previous year. This increase in detention charges adds to the operational costs of the plant and needs to be addressed to improve efficiency.
- Fig 16, there is an exceptional increase of vehicle rejection , 46% increase year on year basis which put additional burden on plant operation .

## Recommendations :

### General recommendations to improve the plant dispatch operations:

- Hire additional workforce: With an increase in business volumes, it's essential to hire more staff to meet the demand. Additional employees can help streamline the workflow and ensure timely completion of tasks.
- Digitize processes: Digitizing processes can provide real-time information flow across departments and minimize delays. Investing in technology can help automate manual processes, reduce errors, and increase efficiency.
- Focus on quality: Investing in modern instruments for the quality department and tank farm can improve the quality of products, reduce rework, and prevent delays. Ensuring the quality of the products can also help maintain customer satisfaction.
- Improve day and night shifts: High volumes of production require a quick turnaround time, and having a more efficient process during day and night shifts can help achieve this. Consider investing in modern technology to improve the overall process.
- Prioritize high-margin products: By prioritizing high-margin products like Erucic Acid, Alcohol, Vegacid, and Glycerin, you can ensure their timely dispatch and improve profitability. On the other

hand, low-margin products like Pitch can be deprioritized depending on traffic in the plant on a given day.

- **Save on detention charges:** By focusing on overall improvement and taking a holistic approach, the company can save up to 32 Lacs annually from paying detention charges.
- **Employee and transporter training:** Training employees and transporters can help them understand the importance of timely delivery, quality control, and safety protocols. This can lead to better coordination, improved efficiency, and a safer work environment.

### Key Action Areas:

Area of Improvement	Department	Descriptions	Recommendations
Phase (3 to 4)	Security	The Total Time taken from Security Check in to Tanker Cleaning for Bulk Load	Deploying additional security manpower for checking of vehicle documents can help to ensure that all necessary documents are in place and reduce delays due to missing paperwork.
			Digitalizing the entire checking process can also help to streamline the flow of information and reduce the time taken for document verification. This can be achieved by implementing an electronic system that allows for real-time verification and tracking of documents, such as a mobile app or an online portal. This would also reduce the need for manual paperwork and improve data accuracy.
Phase( 4 to 5)	Quality Control	Total Time taken from Cleaning to completion of Cleaning Inspection for Bulk	Deploy additional manpower by the QC department to ensure prompt and efficient cleaning of tankers. This will help to reduce the time taken for cleaning and increase the overall efficiency of the plant's operations.
			Ensure proper flow of information from the security team to the QC team regarding the arrival of tankers and their condition, so that the QC team can plan and prioritize their cleaning activities accordingly. This will help to reduce delays and ensure a smooth flow of operations.
Phase( 6 to 7)	TankFarm	Total Time taken from Tanker weightment to completion of Material Loading	Reduce the congestion in the tank farm , which can be achieved by implementing a systematic approach to tank allocation and discharge management. This can include segregating the tanks based on their discharge speed and routing fast-discharging materials to dedicated tank lines.
			Install advanced instruments such as flow meters, level sensors, and automated valves can also help to increase discharge capacity and reduce bottlenecks in the tank farm.
			Additionally, implementing a real-time monitoring system that tracks tank levels and discharge rates can provide better visibility into the overall operations and enable proactive intervention to address any issues that arise.



<b>Phase( 8 to 9)</b>	<b>Quality Control</b>	Total Time taken from completion of Sample Analysis to completion weighment for bulk load- for Packed from completion of Material Loading to Weighment - Gross/Net weight	Deploy more personnel for timely sample collection from the tanker.
			To analyze a sample can take up to 2-3 hours, depending on the product and customer requirements. The delay in sample analysis is exacerbated by the outdated Gas Chromatography (GLC) instruments currently in use. These instruments are slow and not efficient in producing results. Therefore, it is essential to invest in more sophisticated instruments that can deliver results faster and more accurately.
			High value product like erucic acid, vegacid 1880 and glycerin analysis should be prioritized.
			Moreover, training and educating the quality control team can also help in prioritizing the samples that need immediate analysis. This approach can help reduce the overall time it takes to analyze the samples and ensure that the dispatch process runs smoothly.
<b>Phase( 9 to 10)</b>		Total Time taken from completion weighment to tanker Sealing for Bulk load	Need to have special focus on Vegacid 1880, over all time is high in this phase compare to other products.
<b>Phase(12-13)</b>	<b>Dispatch</b>	Total time taken from receiving of QC report to Documentation for Bulk loads, and for packaged load it's from weigh Bridge to Documentation	The first requirement is to digitize the entire dispatch process. This means moving away from manual, paper-based systems to digital systems. The aim is to streamline the process, reduce errors, and make it more efficient overall. This will involve using software to manage the dispatch process from start to finish, including order entry, scheduling, dispatching, tracking, and reporting.
			The next requirement is to replace hard copy quality reports with automatic reports sent to customers. Traditionally, quality reports are created manually and printed out to be given to customers via transporter. With digitalization, quality reports can be created automatically and sent to customers via email or through an online portal. This will reduce the need for paper-based reports and streamline the process of providing customers with up-to-date quality information.
			The third requirement is to accept digital lorry receipts to reduce paper work and manual intervention. Lorry receipts are currently generated manually and printed out. By accepting digital lorry receipts,

			drivers can submit their receipts digitally, which can then be stored and processed electronically. This will reduce the need for manual intervention and make the process more efficient overall.
			The final requirement is to implement necessary measures during night shifts to ensure timely processing of all documents. During night shifts, there may be fewer staff available to process documents, which can lead to delays. To avoid this, measures such as assigning additional staff during night shifts, prioritizing urgent documents, and setting up automated alerts can be implemented.
<b>Vehicles Rejection</b>	<b>Logistics</b>	The rejection of a vehicle due to damage in tanker structure, leakage, corrosion, and improper driver behavior	Educate & train the transporters on the vehicle requirements & SOP's and vehicles and ask them to please fit vehicles only for avoid future rejections.
			provide training to drivers to ensure they understand safe driving practices and the importance of maintaining the vehicle. This training can include topics such as proper loading and unloading procedures, safe driving practices, and vehicle maintenance.
			Charge fine to Transporter to avoid rejection due to faulty vehicles.