Project Documentation

1. Introduction

1.1.Overview

Our project aims to improve how we manage our supply chain by employing such analytical tools as Qlik that can help clarify data. We would like to operate more efficiently, respond quickly, and increase effectiveness in areas such as goods transportation, inventory management and market research.

Challenges:

1.Getting Goods to Customers:

Problems: Inaccurate time keeping of deliveries, drivers using the wrong routes and no real-time tracking for our shipments.

Bad Effects: High costs, customer dissatisfaction, and inability to meet some orders.

2.Keeping Track of What We Have:
Problems: Oversupplying items in storage lack of stock at some points and inaccurate product information's.

Bad Effects: Heavy investment in maintaining stocks tied up; losing out on sales opportunities; subpar performance.

3. Understanding What Customers Want:
- **Problems:** Guessing wrong about what people will buy, not really knowing what they like, and not using our resources wisely.
- **Bad Effects:** Not using our resources in the best way, missing out on growth opportunities, and not making the most of our marketing efforts.

Business Requirements:

- **Data Integration Strategy:** Aggregate data from various supply chain sources and centralize.
- **Visualization using Qlik:**
    - Create intuitive dashboards that are dynamic for easy insights.
- **Advanced Analytics for Optimization:**
    - Analysing historical logistics data to optimize transportation routes.

- **Real-Time Tracking and Monitoring:**
  - Put in place real-time tracking solutions, thereby reducing lead times and cutting costs.

- **Real-Time Analytics for Quick Decisions:**
  - Use up-to-date information to make instant decisions as conditions change unexpectedly or otherwise.

Literature Survey Insights: Research shows that using data analytics can totally transform traditional supply chain practices. Tools like Qlik make it so much easier to see what's going on and make better predictions. Companies in all sorts of industries have seen big improvements in their operations after using these tools. But there can still be challenges, like managing data and making sure everyone in the company is on board with using data to make decisions.

Project Deliverables:

Dashboards:

- **Inventory Management Dashboard:** Monitor stock levels and operational efficiency.

- **Sales and Market Analysis Dashboard:** This will let us see how our sales are doing, also the way market trends affect us.

- **Logistics and Delivery Performance Dashboard:** This will help us track our performance of delivery system operations.

- **Analysis Reports:**

  Sales Analysis: A breakdown of sales performance on granular level.

  Product Name vs. Sales Analysis: An analysis of Top 10 Product names and Sales made by Products during 4 years.

  Late Delivery Risk Analysis: Risk associated with geographical location or mode of payment.

Conclusion: With a solid data integration strategy and Qlik's advanced analytics and visualization tools, we should be able to address our supply chain management challenges. The end result will be higher efficiency rates, reduced costs and more satisfied customers. It is important to ensure that our data is well managed in addition to creating a culture where everyone uses data to make decisions. Hence, all of the

knowledge received will be put into use effectively for continuous improvement of the process at hand.

1.2.Purpose

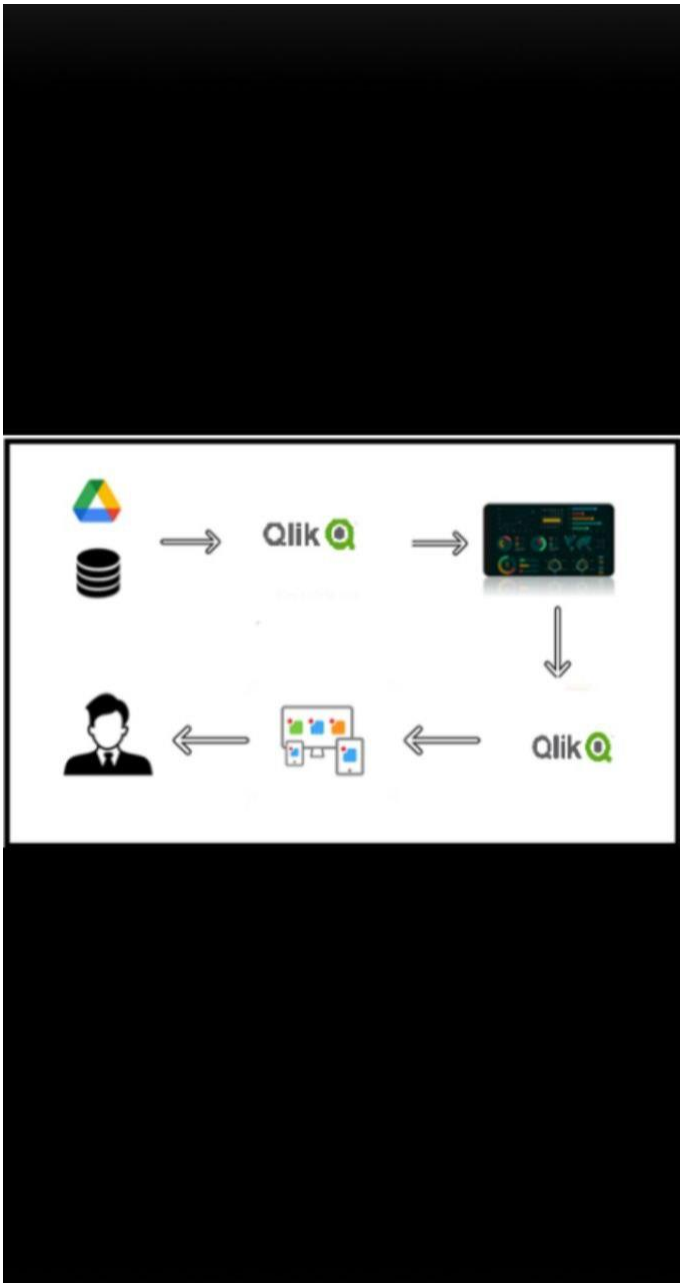
To revolutionize our supply chain management system, the project aims at leveraging datadriven insights and advanced analytics. The following are the goals we are striving to achieve by incorporating strong data integration strategies and utilizing Qlik's advanced visualization and analytics tools:

- **Improve operational efficiency.**
  - Logistical and delivery processes need to be aligned to reduce lead time and transportation costs.
  - Inventory needs to be managed more efficiently to minimize holding costs as well as avoiding stock-outs.
- **Enhance responsiveness.**
  - Real-time tracking of goods that ensures timely deliveries together with improving information visibility.
  - Use real-time analytics for proactive response in case of unexpected events or changes in demand, hence making a flexible and adaptive supply chain.

- **Boost customer satisfaction** ○ Faster order fulfillment through reducing delays in shipping as well as increased accuracy of picking errors which translates into higher customer satisfaction levels.
  - Superior service provision due to inventory availability improvements and having efficient logistics.
- **Improve decision-making.**
  - Advanced analytics should provide deeper insights into market trends, sales performance, and customer behaviour.
  - From forecasting and planning through execution and optimization; support data driven decision-making at all supply chain levels.
- **Foster a Data-Driven Culture**
  - Build robust frameworks for data governance that guarantee accuracy of information lack of duplication or inconsistency in it and security around it.
  - Culture where every employee values his data will be used for continual improvement purposes plus transformation.

In general, this initiative hopes to make our supply chain into a productive, prompt and client centred business model giving us an edge over other players which is sustainable growth.

1.3.Technical Architecture



2.Define Problem/ Problem Understanding

2.1. Specify the business problem

To make use of Qlik's data-driven insights to transform supply chain management systems for optimum use in logistics, forecasting and inventory control is the objective.

This project seeks to increase operating efficiency and responsiveness by focusing on logistics and delivery performance, inventory management as well as market and sales analysis.

- **Logistics and Delivery Performance:**
  Problems: Late deliveries, inefficient transportation routes as well as lack of real-time tracking technology lead to cost increases and customer dissatisfaction.

- **Inventory Management:**
  Problems: Excessive inventories leading to increased inventory costs, missed sales opportunities for inventories as well as customer satisfaction; inaccurate records of stocks resulting in inefficiencies in inventorization which can result in lost revenue.

- **Market and Sales Analysis:**

  Problems: Wrong predictions about what customers want to buy and do not want to buy; products misunderstood by people who lack product knowledge combined with ignorance of market trends have resulted in poor marketing tactics including ineffective advertisements.

2.2 Business Requirements

- **Data Integration:**
  Also, data needs to be compiled and centralized from different sectors of the supply chain.
  - **Simple Explanation:** This entails sourcing all relevant information about the supply chain from the various sources.
- **Visualization with Qlik:**
  The next part involves creating easily understood dashboards using visualization tools available in Qlik.
  - **Simple Explanation:** This is simply a matter of making clear and dynamic charts and graphs showing the details of the supply chain.
- **Advanced Analytics for Optimization:**
  More so, analyse historical logistics data through Qlik's advanced analytics for future trends and improvements in transportation routes.
  - **Simple Explanation:** Observe old data to detect patterns which would help make delivery routes better.
- **Real-Time Tracking and Monitoring:**
  So, systems for real-time tracking of goods as well as following their movement around are needed to be established.
  - **Simple Explanation:** Keep track of products' locations at any given time in order to enhance delivery process while cutting down expenses that are associated with it.

- **Real-Time Analytics for Quick Decisions:**
  Besides, they must employ real-time analytics to allow them take quick decisions when things change suddenly in their businesses operations.

  - **Simple Explanation:** Use instant data analysis so you can quickly adapt to any sudden changes or problems in your supply chain management.

These requirements will help us build a system that is efficient, responsive, and gives us a clear picture of our supply chain operations.

2.3 Literature Survey

In research on how to better supply chain management through the use of data-driven insights and advanced analytics there is a growing interest in employing data analysis to change the traditional process of supply chain. Some scholars argue that tools like Qlik can be used to facilitate better management by companies on their inventory. In this way, it is argued that the use of sophisticated analytics could provide greater visibility into operations, more precise forecasts and higher efficiency in stock control.

Furthermore, other studies examine different ways to improve supply chains with regards to data using various techniques and technologies; they show situations where firms have been able to respond quickly to changes as well as operate efficiently.

However, some research also points out problems with implementing a data approach. It highlights the fact that they have to have firm rules for managing data and install an organizational culture that ensures effective utilization of information.

2.4. Social Or Business Impact.

Social Impact Analysis:

1. Create visualizations to showcase the demographic distribution of Supply chain management.
2. Analyse how Data-Driven Innovations in Supply Chain Management have impacted social welfare programs, financial inclusion, and other key areas.
3. Explore any correlations between usage and improvements.

Business Impact Analysis:

1. Analyse how Data-Driven Innovations in Supply Chain Management have affected businesses, especially in sectors like banking, telecommunications, and e-commerce.
2. Evaluate the impact of Data-Driven Innovations in Supply Chain Management on sales, customer onboarding, and operational efficiency.

3.DATA COLLECTION

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes and generate insights from the data.

3.1. COLLECT THE DATASET

The DataCo SMART SUPPLY CHAIN Dataset is available in Kaggle. The dataset consists of structured and unstructured data. There are three files in that dataset.

Type Data:

Structured Data:

DataCoSupplyChainDataset.csv

DescriptionDataCoSupplyChain.csv

Unstructured Data:

Tokenized_access_logs.csv (Clickstream)

Description about Dataset:

DataCoSupplyChainDataset.csv

The DataCoSupplyChainDataset.csv consists of 53 columns and 1,80,519 rows. Data Contains all the meta information regarding the columns described in the CSV files.

You can download the Dataset. Dataset link: -DataCo SMART SUPPLY CHAIN Dataset

3.2.CONNECT DATA WITH QLIK SENSE

There are two ways to load the dataset into the Qlik Sense. First log into the Qlik Cloud
Steps to connect data with Qlik Sense:

1) **With Dataset button**

Step -1: Open the Qlik Analytics Services platform, home tab.

Step-2: In the home tab, you can see '+' or add symbol, click the button.

Step-3: There you can see "Dataset" option, click that option.

Step-4: Browse the file and load the data.

Step-5: Now the Dataset is successfully connected to the Qlik sense.

2) **With New Analytics App**

Step-1: Open the Qlik Analytics Services platform, home tab.

Step-2: In the home tab, you can see '+' or add symbol, click the button.

Step-3: There you can see "new analytics app" option, create an app with name

Step-4: "open the app", you can see 3 options. Such as Data Catalog, Files and other sources and Data load Editor.

Step-5: With the help of Files and other sources and Data load editor, you can connect dataset with Qlik sense.

4.DATA PREPARATION

Data preparation is the process of **gathering, combining, structuring and organizing data** so it can be used in business intelligence (BI), analytics and data visualization applications.

4.1 PREPARE THE DATA FOR VISUALIZATION

After connecting the dataset into the qlik sense, create a new analytics app. Then after you can see the three options, i.e., **explore the dataset, Insight advisor and new analytics sheet.**

Steps to process the dataset:

Step-1: Click the option**, "explore the dataset".**

Step-2: There you can see **"associations"** of the tables of the connected dataset, press **"apply all"** if you want.

Step-3: To edit the dataset, you can see the **edit dataset** option "**bottom of the tab"**. Press that button.

Step-4: There, you can remove unwanted columns, handling error, fill the missing values with mean, and removing null values.

- To remove unwanted columns, select the "select data from source" option. Then you can unselect the columns which are all not needed for performing Data Visualizations.
- I have replaced the null values with mean.

In my Dataset consists of 53 columns, in that I removed 20 columns which are all not needed for my visualization. Those removed columns are Category ID, Customer name, Customer ID, Customer Email, Customer Fname, Customer Lname, Customer Password, Customer zipcode, Customer street, Order city, Order id, Order Item Cardprod Id, Order Item ID, Order zipcode, Product Card Id, Product Category Id, Product description, Product Image and Category ID. Can find the description of columns in the above pages.

5.DATA VISUALIZATIONS

Data visualizations:

- Refers to generating graphical representations of information.
- Involves charts, graphs, maps, and other visual tools.
- Helps analyse and interpret complex datasets.
- Allows easy understanding of patterns, trends, and outliers.

5.1.UNIQUE VISUALIZATIONS

Steps to visualizing data in Qlik sense:

Step-1: Create a **new sheet** in **analytics app** in which the data is loaded already.

Step-2: There, you find **"Edit sheet"** option on the **top –right corner**, click the **button.**

Step-3: There you can visualize the data.

Step-4: For advance visualization, enable the **"advance option"**, then you can find many visualizations. With the help of those visualization, visualize the data as per your requirement.

Unique visualizations with my question, variables used, and type of visualizations are included:

1) **Late Delivery Risk by Region**

- **Question**: Which regions have the highest risk of late deliveries?
- **Variables**: Late_delivery_risk, Order Region.
- **Visualization**: Tree map.

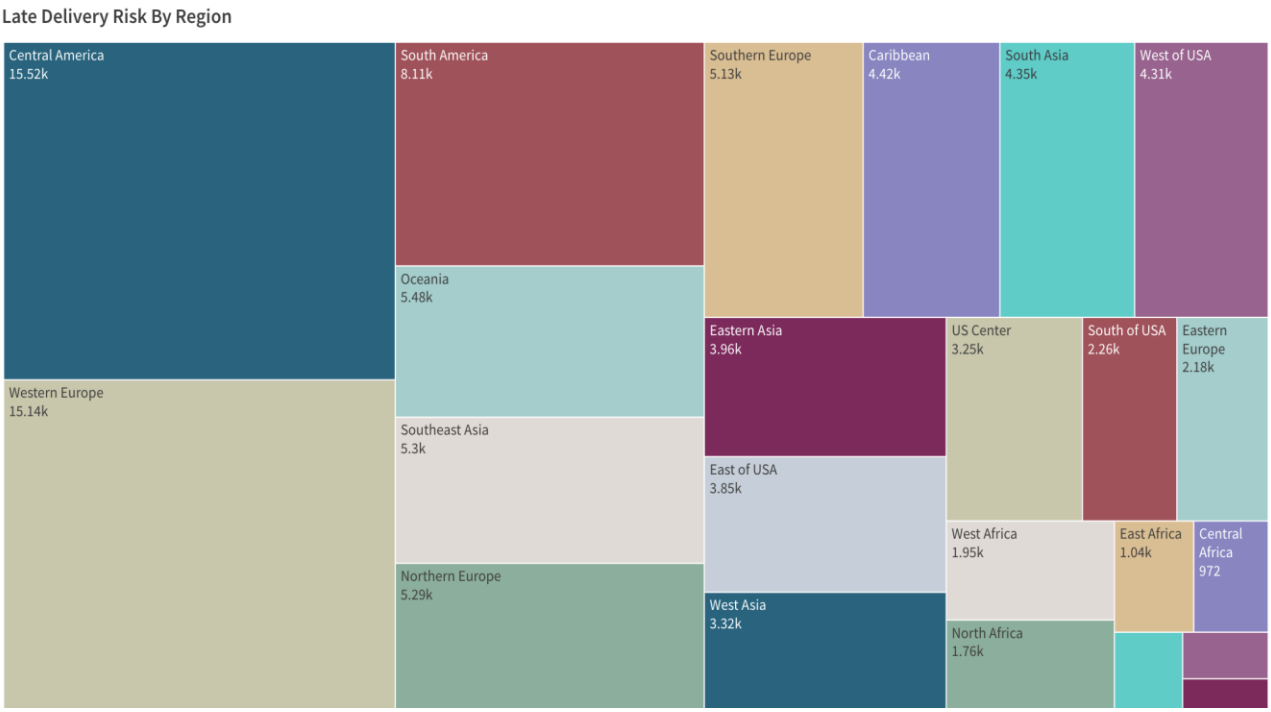


Fig-1: Late delivery risk by region

2) Sum of Order Item Total by Delivery Status

- **Question**: How do delivery statuses affect the total value of orders?
- **Variables**: Order Item Total, Delivery Status.
- **Visualization**: Line chart.

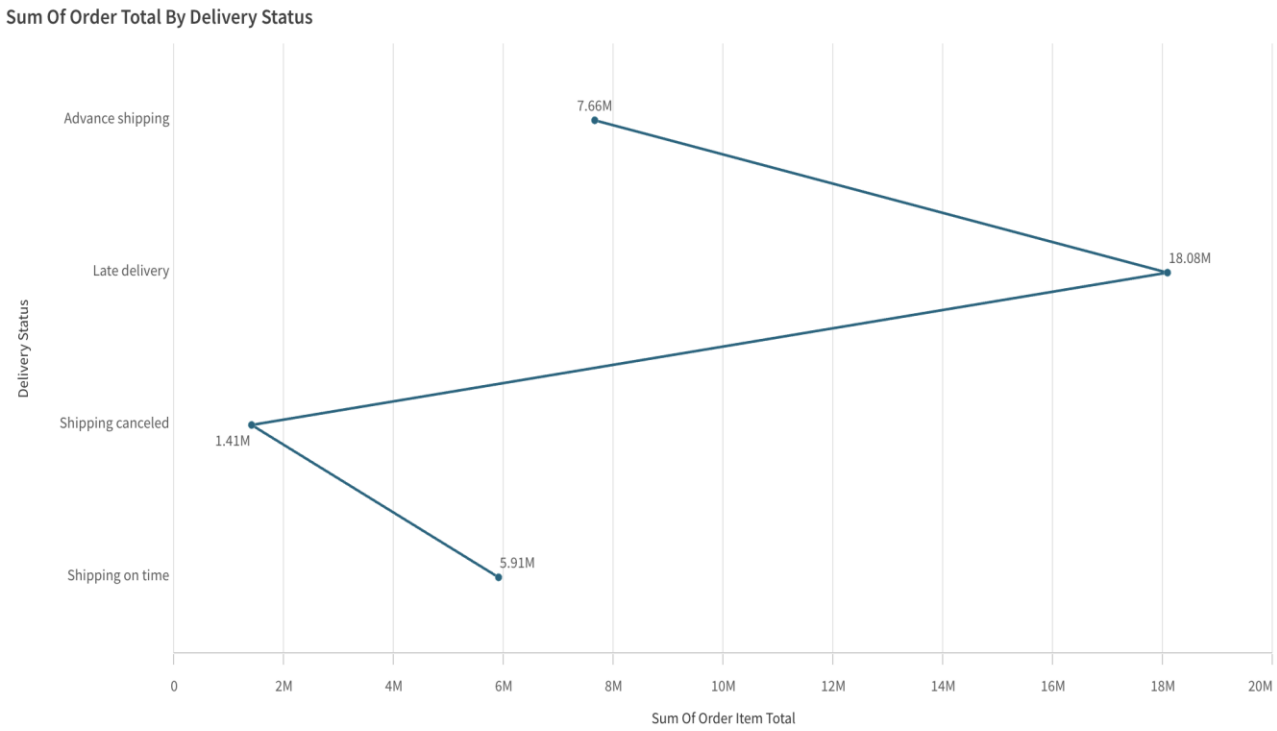


Fig-2: Sum of order Item Total by delivery Status

3) Profit per Order by Region

- **Question**: How does profit vary across different regions?
- **Variables**: Order Profit Per Order, Order Region.
- **Visualization**: Horizontal Bar chart.

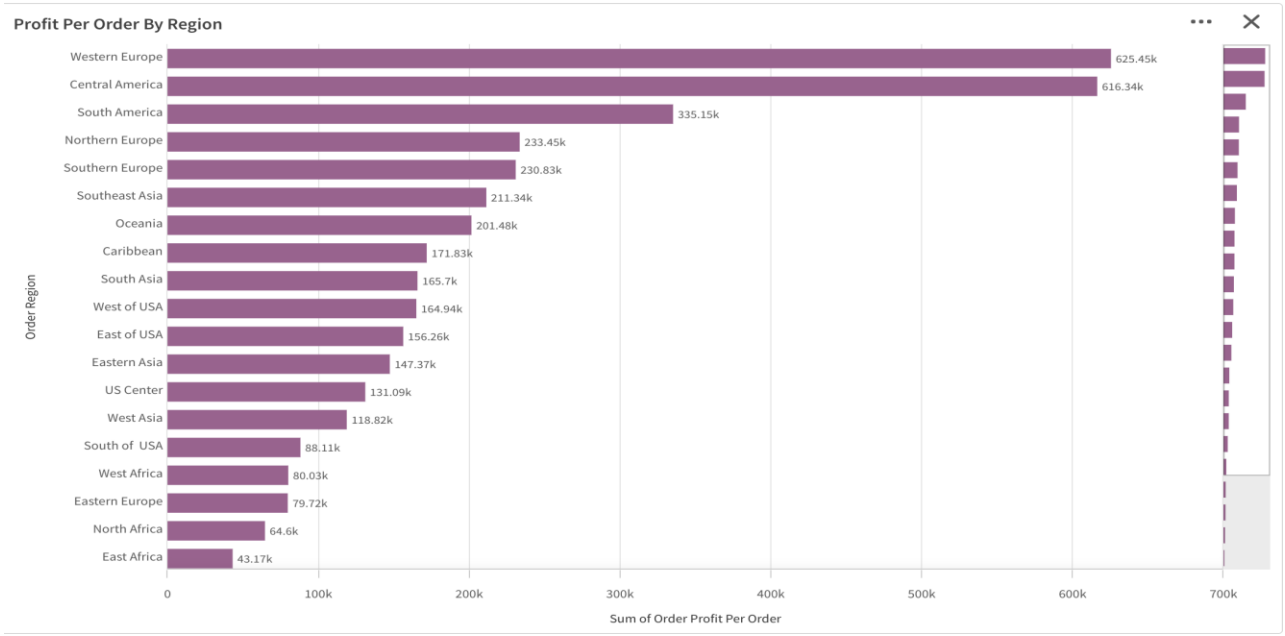


Fig-3: Profit per order region

4) Average Delivery Time by Shipping Mode

- **Question**: What is the average delivery time for each shipping mode?
- **Variables**: Days for shipping (real), Shipping Mode.
- **Visualization**: Horizontal Bar chart.

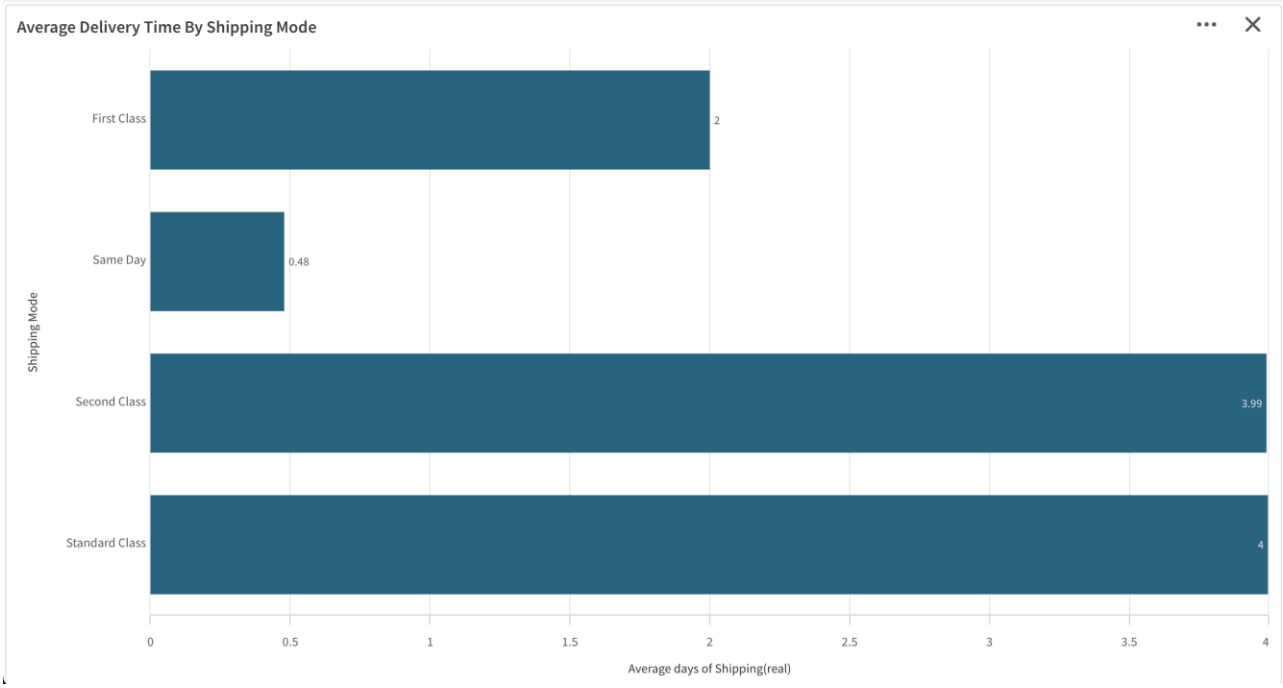


Fig-4: Average Delivery Time by shipping mode

5) Shipping Time Analysis

- **Question**: How does the actual shipping time compare to the scheduled shipping time?
- **Variables**: Days for shipping (real), Days for shipment (scheduled).
- **Visualization**: Scatter plot.

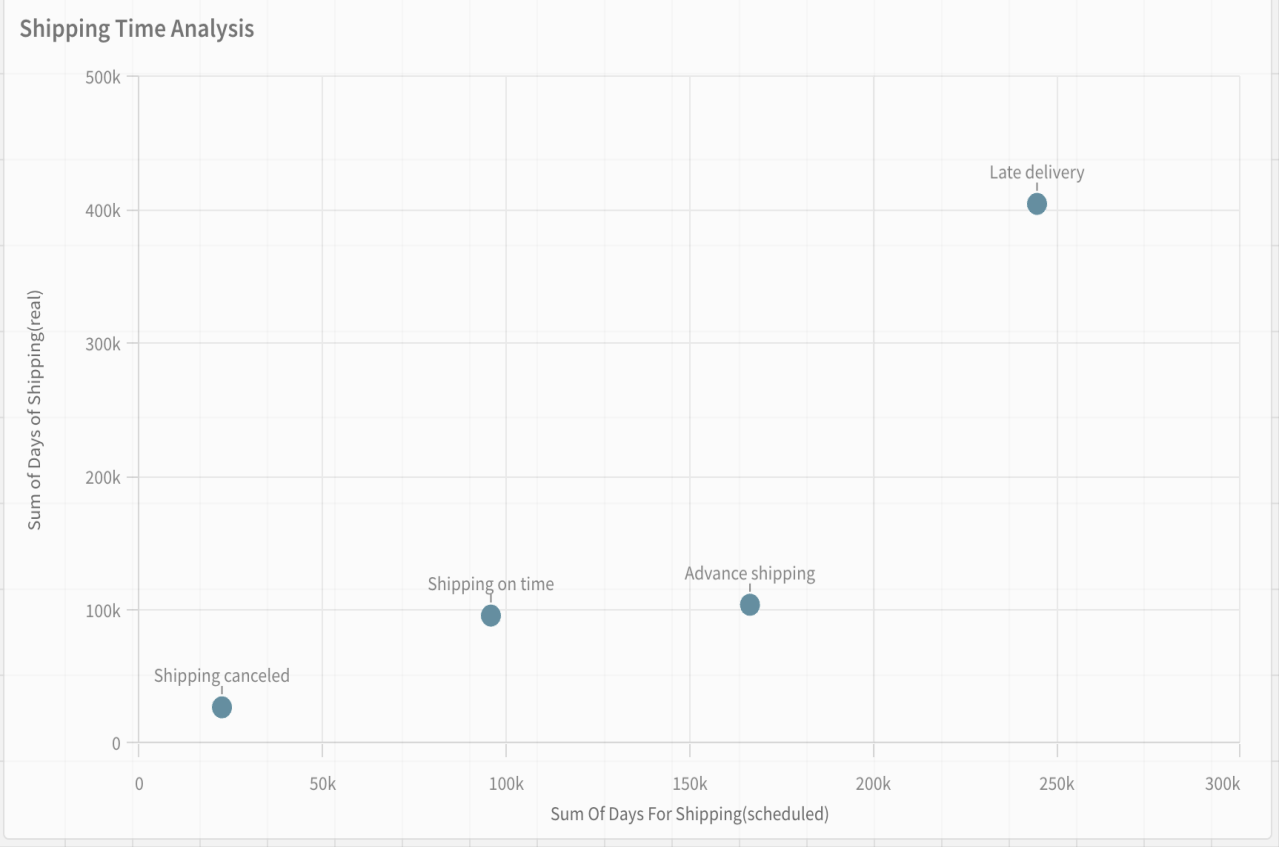


Fig-5: Shipping Time Analysis

6) Sum of Benefit per Order by Different Category

- **Question**: How much profit is generated per order for each product category?
- **Variables**: Benefit per order, Category Name.
- **Visualization**: Pie chart.

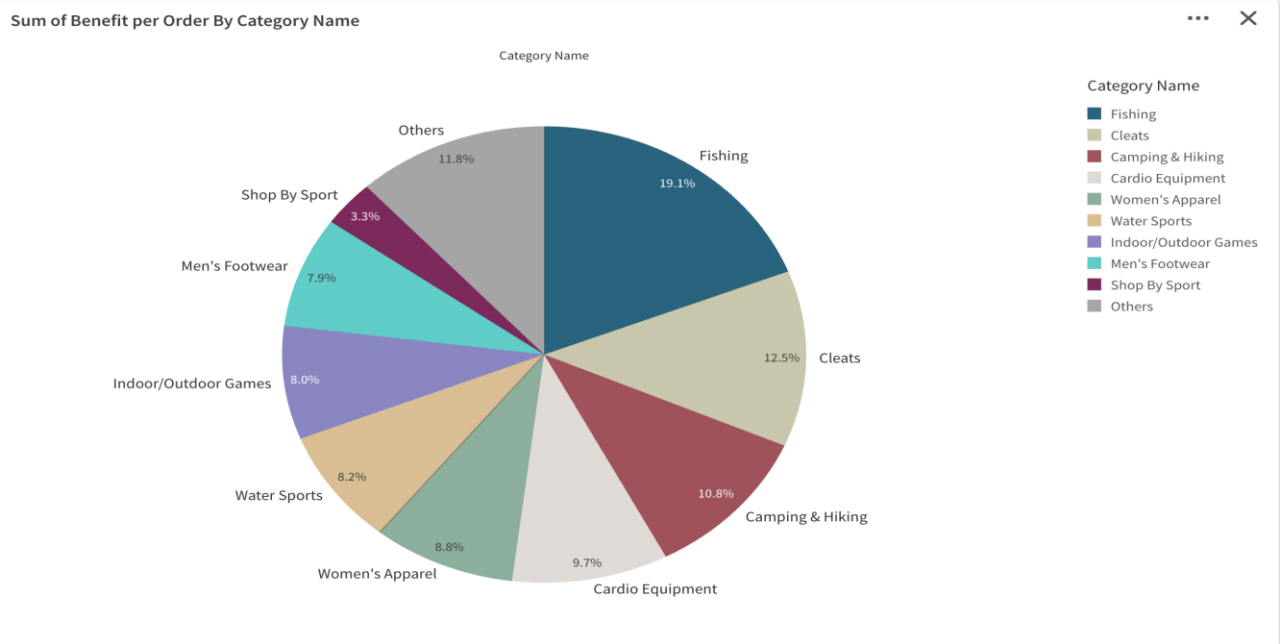


Fig-6: Sum of benefit per order by different Category

7) Top 10 Regions by Sales

- **Question**: Which Regions generate highest Sales?
- **Variables**: Sales, Order region.
- **Visualization**: Line chart.

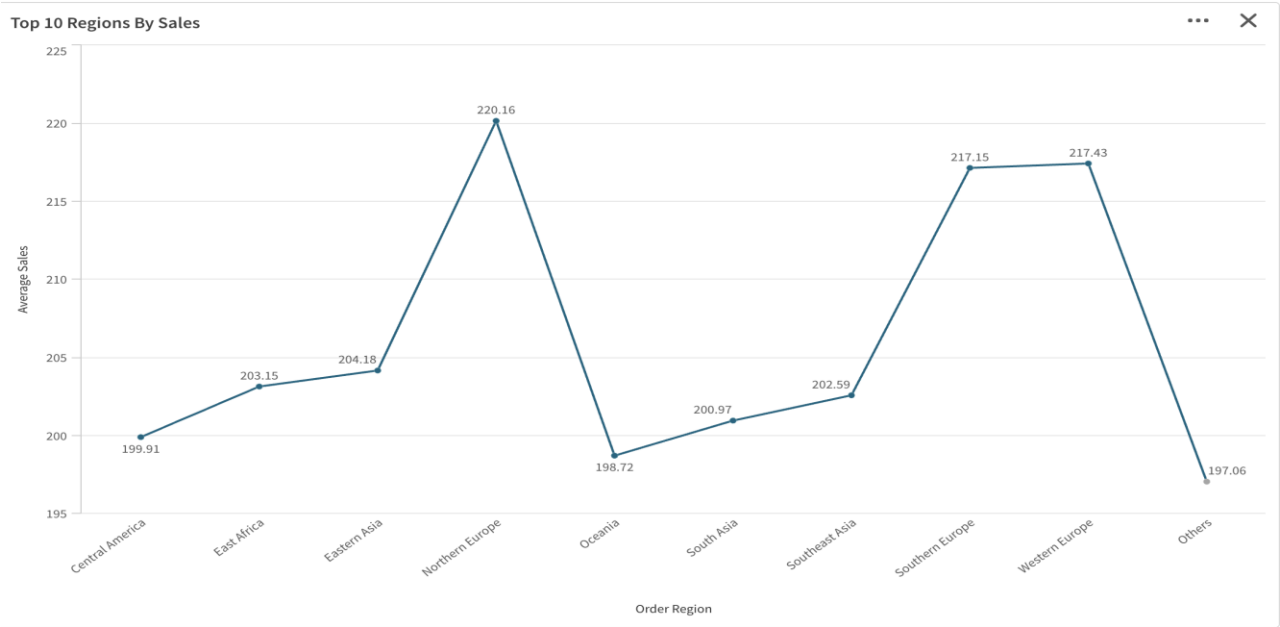


Fig-7: Top 10 Regions by Sales

8) Sum of Order Item Quantity by Average Sales

- **Question**: How does the quantity of items ordered correlate with average sales?
- **Variables**: Order Item Quantity, Sales.
- **Visualization**: Scatter plot.

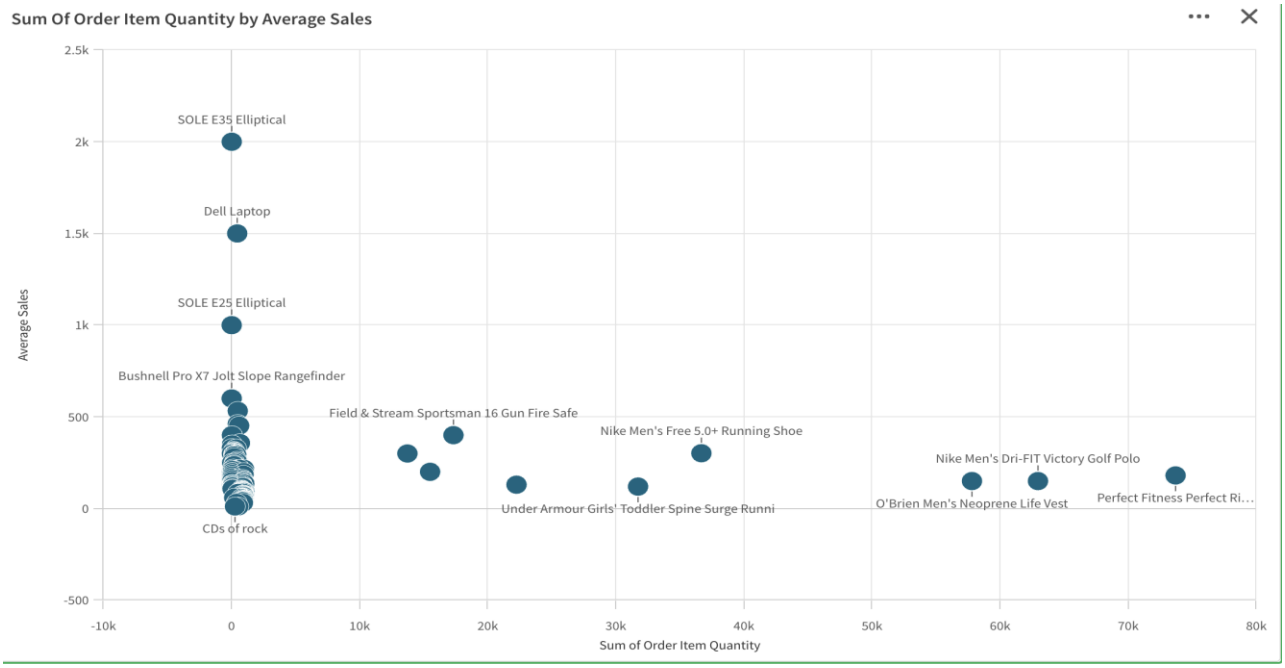


Fig-8: Sum of order item quantity by average sales

9) Top 10 Products by Sum of Sales

- **Question**: Which products generate the highest Sales?
- **Variables**: Product Name, Sales.
- **Visualization**: Bar chart.

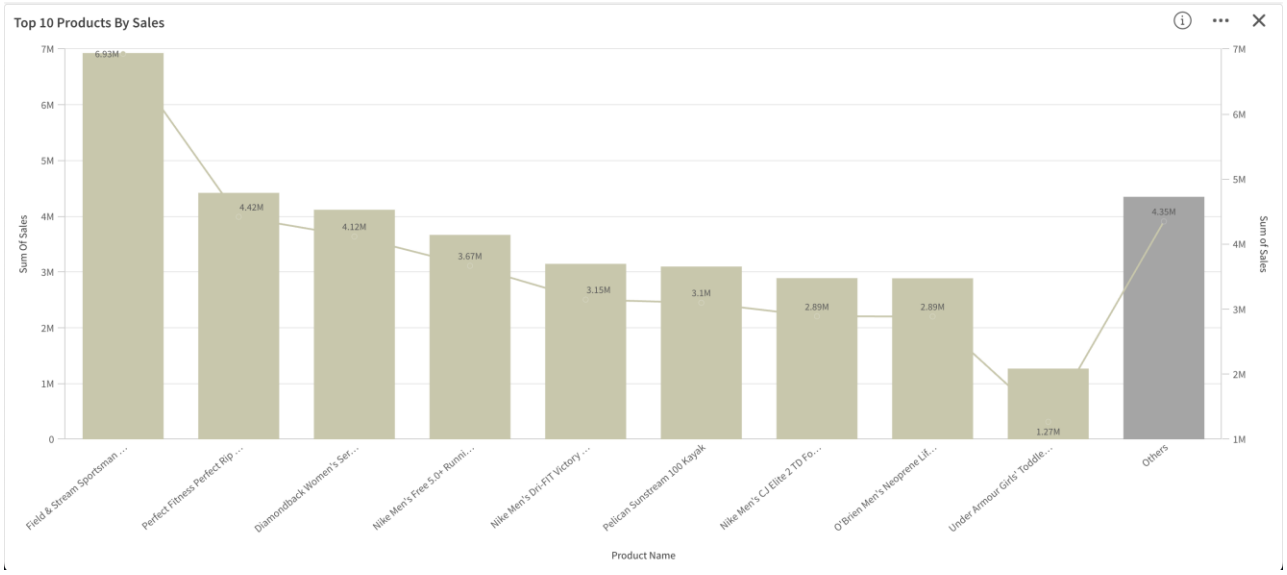


Fig-9: Top 10 products by sum of sales

10) Sum of Sales by Different Modes

- **Question**: How does the sum of sales vary by different shipping modes?
- **Variables**: Sales, Shipping Mode.
- **Visualization**: Bar chart.

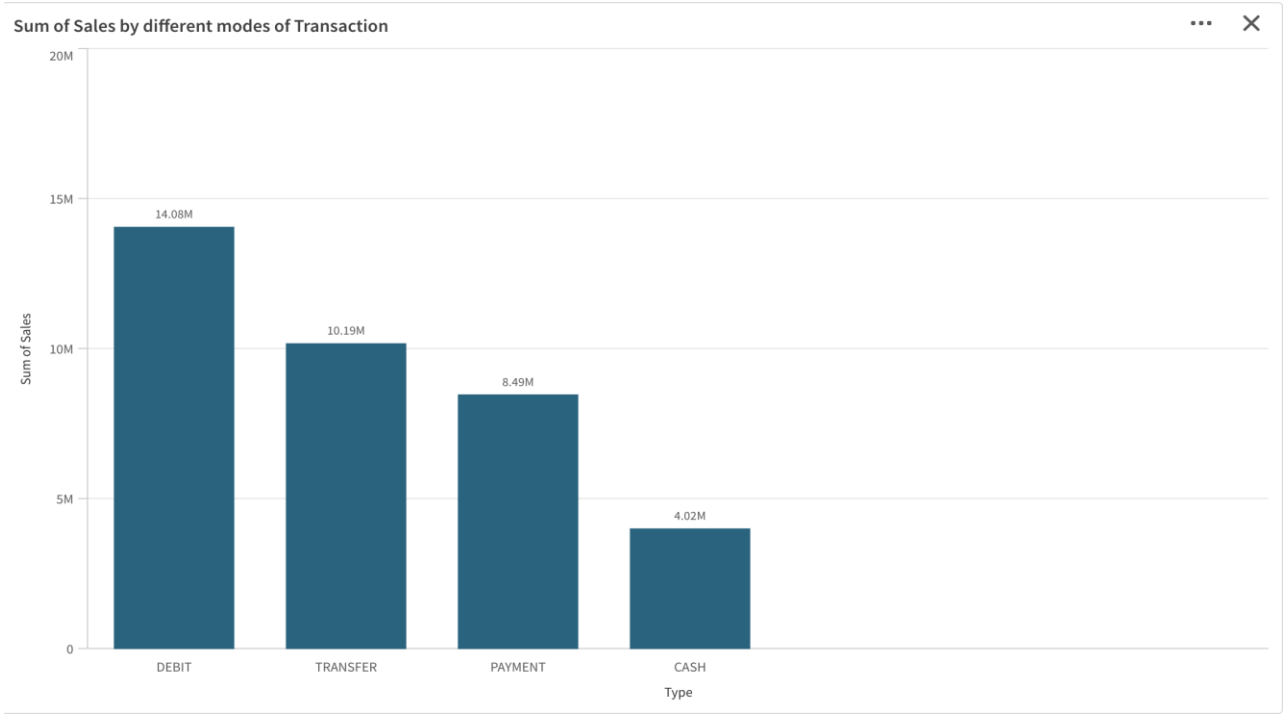


Fig-10: Sum of sales by different modes

11) Sum of Sales by Order Item Total and Category

- **Question**: What is the total sales amount categorized by the order item total?
- **Variables**: Sales, Order Item Total, Category.
- **Visualization**: Scatter plot.

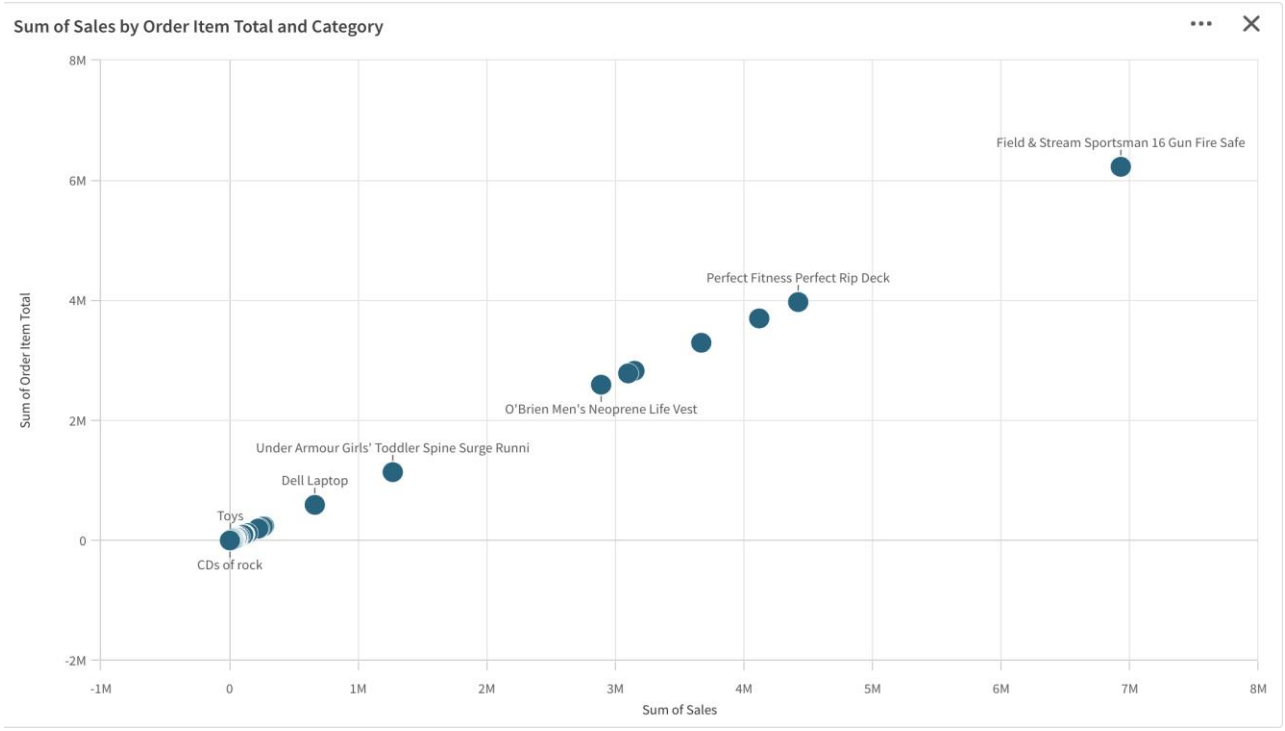


Fig-11: Sum of sales by order Item Total

12) Top 10 Highest Count of Markets in Countries

- **Question**: Which markets in which countries have the highest order counts?
- **Variables**: Market, Order Country.
- **Visualization**: Bar chart.

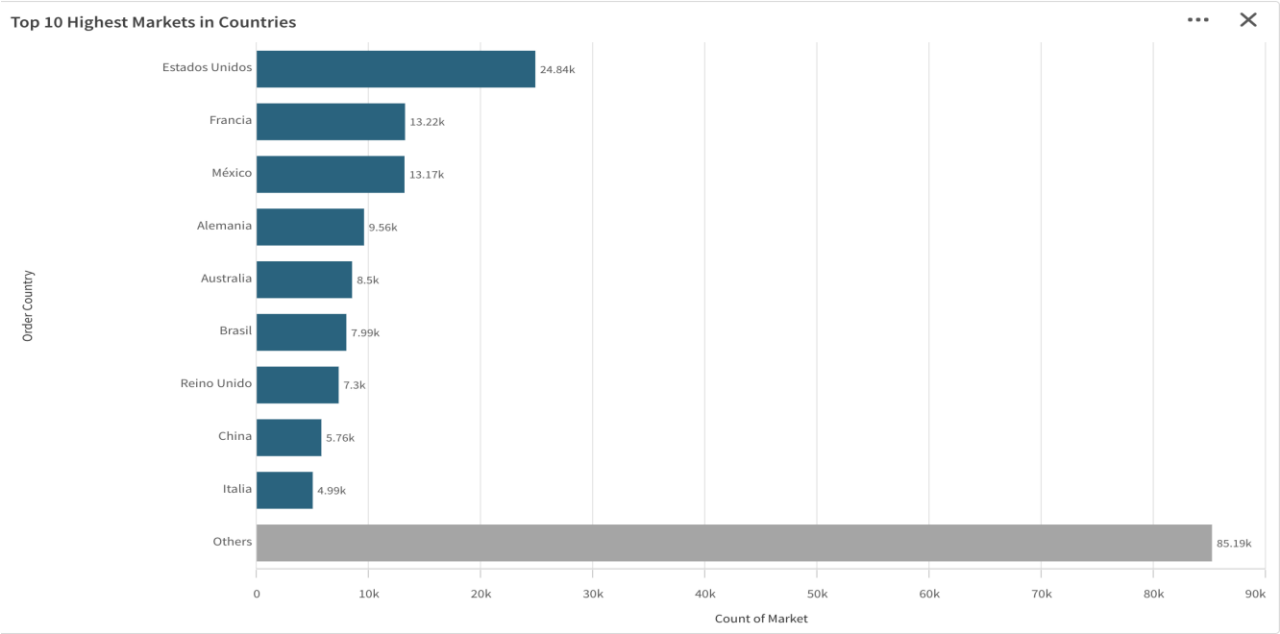
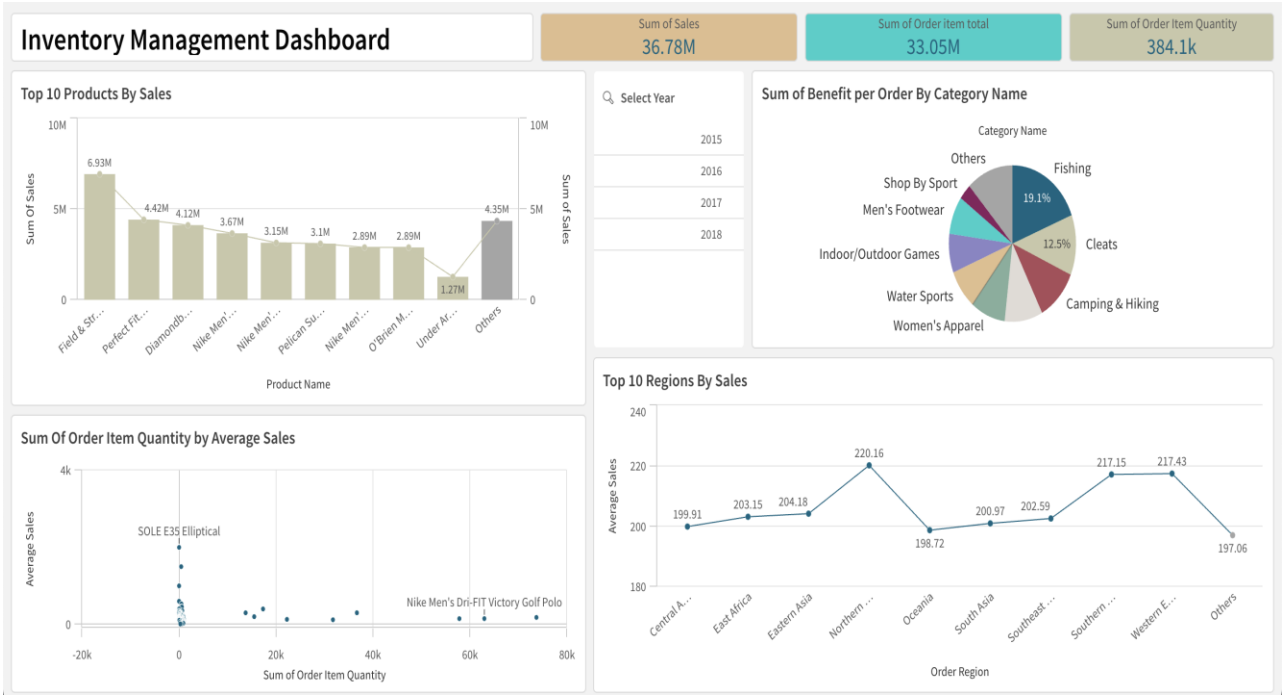


Fig-12: Top 10 highest count of markets in countries

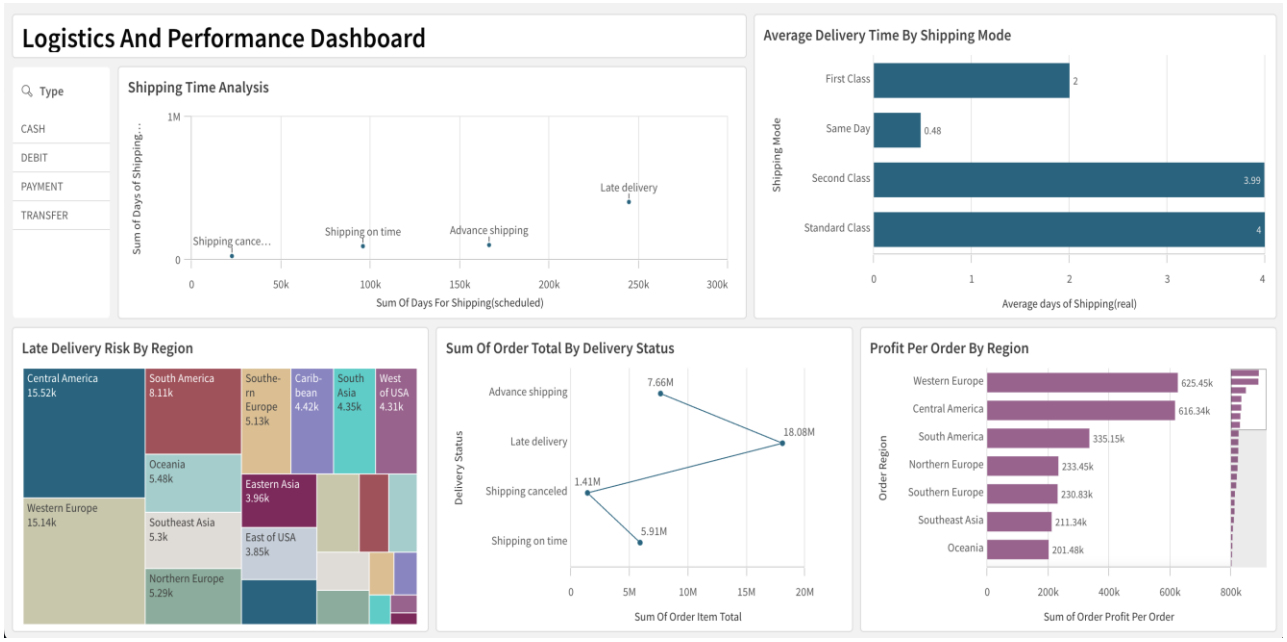
6. DASHBOARDS

6.1. RESPONSIVE AND DESIGN OF DASHBOARDS

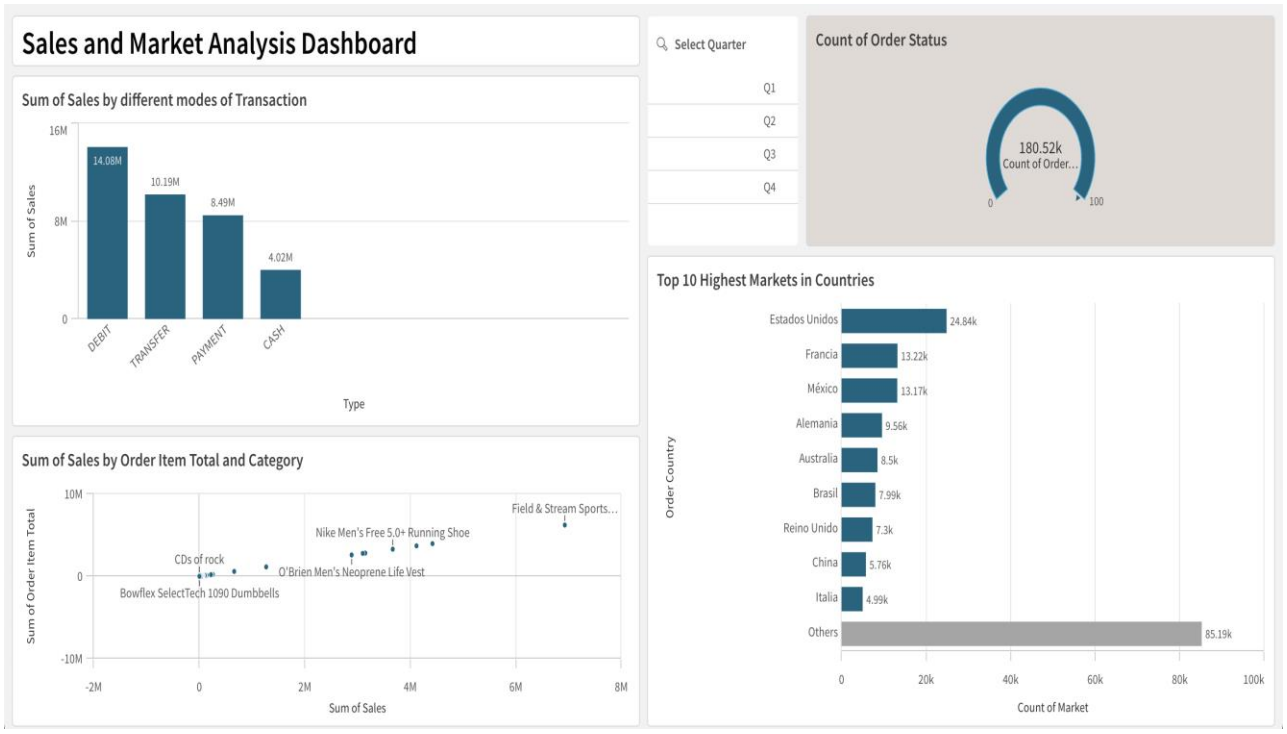
Inventory Management Dashboard



Logistics and Delivery Performance Dashboard



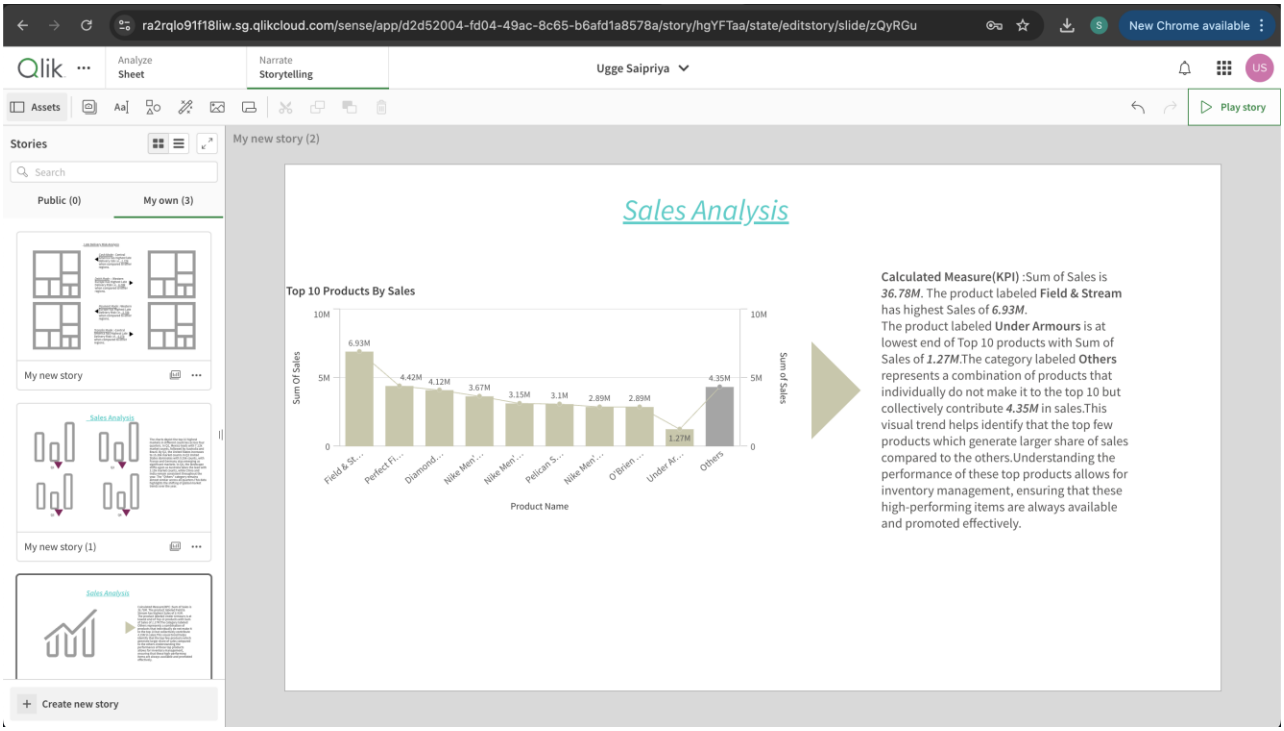
Sales and Market analysis Dashboard



7.STORYTELLING

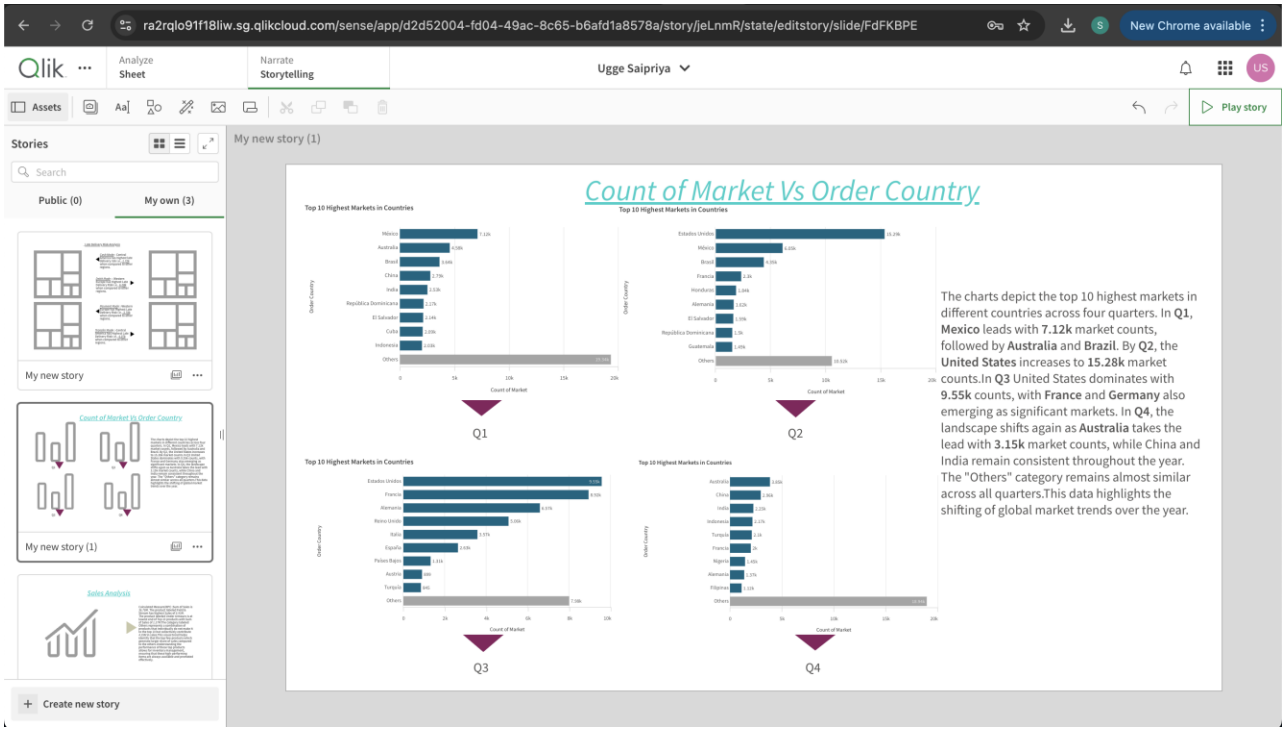
7.1. STORY CREATION

1)Top 10 Products by Sales (2015, 2016, 2017,2018)



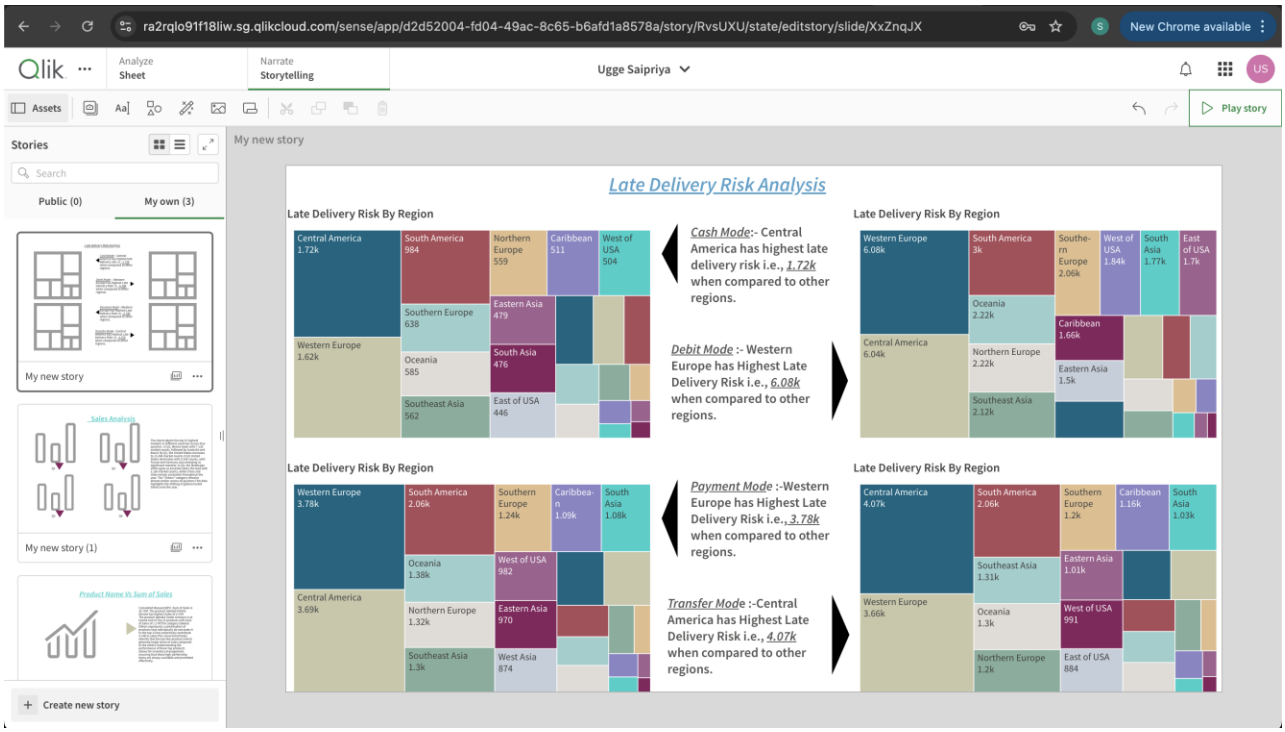
- **Content:** Sales data for the top 10 products over Four years.
- **Purpose:** Show trends in product sales, highlighting Top 10 products in 4 years i.e., 2015, 2016, 2017, 2018.

2)Count of Market Vs Order Country Based on Quarters



- **Content**: Comparison of Count of Markets and Order Country in different Quarters.
- **Purpose:** Show the relationship between the Count of Markets and their Order Region, highlighting which Order Country has Highest Count of Markets.

3)Late Delivery Risk Analysis Based on Payment Mode



- **Content**: Analysis of delivery risks associated with different payment modes in various regions.

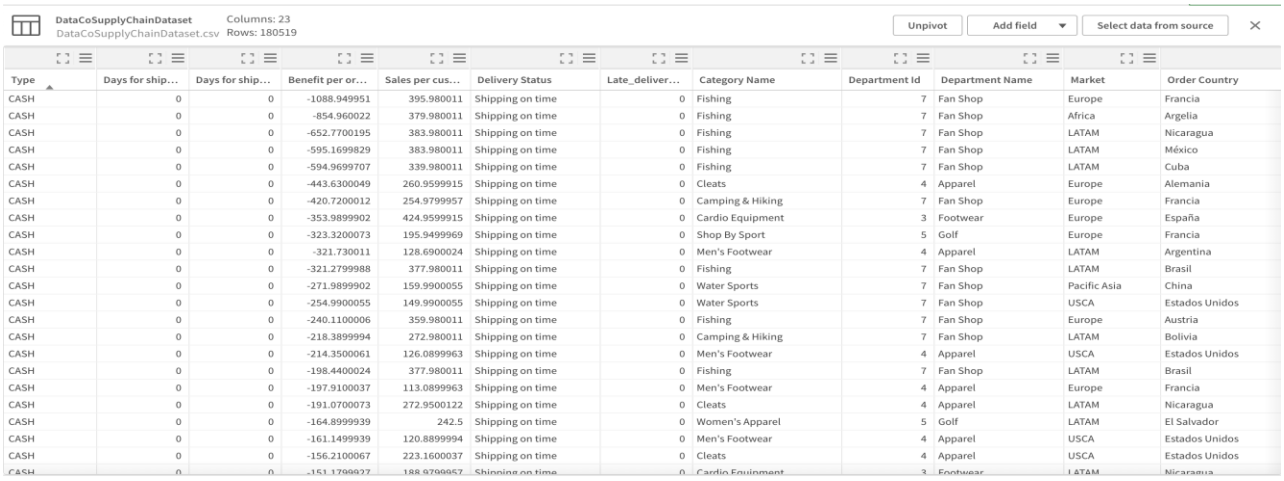
  Details:

  - **Cash Mode**: Central America has the highest late delivery risk (1.72k).
  - **Debit Mode**: Western Europe has the highest late delivery risk (6.08k).
  - **Payment Mode**: Western Europe has the highest late delivery risk (3.78k).
  - **Transfer Mode:** Central America has the highest late delivery risk (4.07k).
- **Purpose**: Identify the risk areas in delivery based on payment methods, to improve logistics planning.

8.PERFORMANCE TESTING

8.1. AMOUNT OF DATA RENDERED

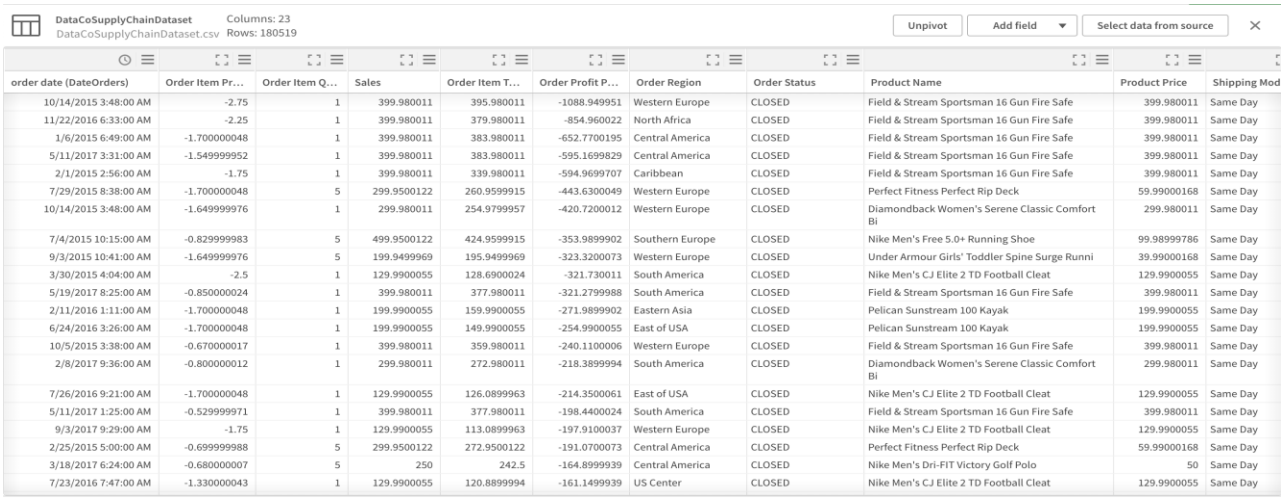
The dataset is loaded from the kaggle.com. I loaded 53 columns and 1,80,519 rows of data into the Qlik sense. I removed 20 unwanted columns and some of the null values and then performed the analytics**.**



DataCoSupplyChainDataset
DataCoSupplyChainDataset.csv
Columns: 23
Rows: 180519

Unpivot | Add field | Select data from source

Type	Days for ship...	Days for ship...	Benefit per or...	Sales per cus...	Delivery Status	Late_deliver...	Category Name	Department Id	Department Name	Market	Order Country
CASH	0	0	-1088.949951	395.980011	Shipping on time	0	Fishing	7	Fan Shop	Europe	Francia
CASH	0	0	-854.960022	379.980011	Shipping on time	0	Fishing	7	Fan Shop	Africa	Argelia
CASH	0	0	-652.7700195	383.980011	Shipping on time	0	Fishing	7	Fan Shop	LATAM	Nicaragua
CASH	0	0	-595.1699829	383.980011	Shipping on time	0	Fishing	7	Fan Shop	LATAM	México
CASH	0	0	-594.9699707	339.980011	Shipping on time	0	Fishing	7	Fan Shop	LATAM	Cuba
CASH	0	0	-443.6300049	260.9599915	Shipping on time	0	Cleats	4	Apparel	Europe	Alemania
CASH	0	0	-420.7200012	254.9799957	Shipping on time	0	Camping & Hiking	7	Fan Shop	Europe	Francia
CASH	0	0	-353.9899902	424.9599915	Shipping on time	0	Cardio Equipment	3	Footwear	Europe	España
CASH	0	0	-323.3200073	195.9499969	Shipping on time	0	Shop By Sport	5	Golf	Europe	Francia
CASH	0	0	-321.730011	128.6900024	Shipping on time	0	Men's Footwear	4	Apparel	LATAM	Argentina
CASH	0	0	-321.2799988	377.980011	Shipping on time	0	Fishing	7	Fan Shop	LATAM	Brasil
CASH	0	0	-271.9899902	159.9900055	Shipping on time	0	Water Sports	7	Fan Shop	Pacific Asia	China
CASH	0	0	-254.9900055	149.9900055	Shipping on time	0	Water Sports	7	Fan Shop	USCA	Estados Unidos
CASH	0	0	-240.1100006	359.980011	Shipping on time	0	Fishing	7	Fan Shop	Europe	Austria
CASH	0	0	-218.3899994	272.980011	Shipping on time	0	Camping & Hiking	7	Fan Shop	LATAM	Bolivia
CASH	0	0	-214.3500061	126.0899963	Shipping on time	0	Men's Footwear	4	Apparel	USCA	Estados Unidos
CASH	0	0	-198.4400024	377.980011	Shipping on time	0	Fishing	7	Fan Shop	LATAM	Brasil
CASH	0	0	-197.9100037	113.0899963	Shipping on time	0	Men's Footwear	4	Apparel	Europe	Francia
CASH	0	0	-191.0700073	272.9500122	Shipping on time	0	Cleats	4	Apparel	LATAM	Nicaragua
CASH	0	0	-164.8999939	242.5	Shipping on time	0	Women's Apparel	5	Golf	LATAM	El Salvador
CASH	0	0	-161.1499939	120.8899994	Shipping on time	0	Men's Footwear	4	Apparel	USCA	Estados Unidos
CASH	0	0	-156.2100067	223.1600037	Shipping on time	0	Cleats	4	Apparel	USCA	Estados Unidos
CASH	0	0	-151.1799927	188.9799957	Shipping on time	0	Cardio Equipment	3	Footwear	LATAM	Nicaragua



DataCoSupplyChainDataset
DataCoSupplyChainDataset.csv
Columns: 23
Rows: 180519

Unpivot | Add field | Select data from source

order date (DateOrders)	Order Item Pr...	Order Item Q...	Sales	Order Item T...	Order Profit P...	Order Region	Order Status	Product Name	Product Price	Shipping Mod
10/14/2015 3:48:00 AM	-2.75	1	399.980011	395.980011	-1088.949951	Western Europe	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
11/22/2016 6:33:00 AM	-2.25	1	399.980011	379.980011	-854.960022	North Africa	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
1/6/2015 6:49:00 AM	-1.700000048	1	399.980011	383.980011	-652.7700195	Central America	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
5/11/2017 3:31:00 AM	-1.549999952	1	399.980011	383.980011	-595.1699829	Central America	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
2/1/2015 2:56:00 AM	-1.75	1	399.980011	339.980011	-594.9699707	Caribbean	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
7/29/2015 8:38:00 AM	-1.700000048	5	299.9500122	260.9599915	-443.6300049	Western Europe	CLOSED	Perfect Fitness Perfect Rip Deck	59.99000168	Same Day
10/14/2015 3:48:00 AM	-1.649999976	1	299.980011	254.9799957	-420.7200012	Western Europe	CLOSED	Diamondback Women's Serene Classic Comfort Bi	299.980011	Same Day
7/4/2015 10:15:00 AM	-0.829999983	5	499.9500122	424.9599915	-353.9899902	Southern Europe	CLOSED	Nike Men's Free 5.0+ Running Shoe	99.98999786	Same Day
9/3/2015 10:41:00 AM	-1.649999976	5	199.9499969	195.9499969	-323.3200073	Western Europe	CLOSED	Under Armour Girls' Toddler Spine Surge Runni	39.99000168	Same Day
3/30/2015 4:04:00 AM	-2.5	1	129.9900055	128.6900024	-321.730011	South America	CLOSED	Nike Men's CJ Elite 2 TD Football Cleat	129.9900055	Same Day
5/19/2017 8:25:00 AM	-0.850000024	1	399.980011	377.980011	-321.2799988	South America	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
2/11/2016 1:11:00 AM	-1.700000048	1	199.9900055	159.9900055	-271.9899902	Eastern Asia	CLOSED	Pelican Sunstream 100 Kayak	199.9900055	Same Day
6/24/2016 3:26:00 AM	-1.700000048	1	199.9900055	149.9900055	-254.9900055	East of USA	CLOSED	Pelican Sunstream 100 Kayak	199.9900055	Same Day
10/5/2015 3:38:00 AM	-0.670000017	1	399.980011	359.980011	-240.1100006	Western Europe	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
2/8/2017 9:36:00 AM	-0.800000012	1	299.980011	272.980011	-218.3899994	South America	CLOSED	Diamondback Women's Serene Classic Comfort Bi	299.980011	Same Day
7/26/2016 9:21:00 AM	-1.700000048	1	129.9900055	126.0899963	-214.3500061	East of USA	CLOSED	Nike Men's CJ Elite 2 TD Football Cleat	129.9900055	Same Day
5/11/2017 1:25:00 AM	-0.529999971	1	399.980011	377.980011	-198.4400024	South America	CLOSED	Field & Stream Sportsman 16 Gun Fire Safe	399.980011	Same Day
9/3/2017 9:29:00 AM	-1.75	1	129.9900055	113.0899963	-197.9100037	Western Europe	CLOSED	Nike Men's CJ Elite 2 TD Football Cleat	129.9900055	Same Day
2/25/2015 5:00:00 AM	-0.699999988	5	299.9500122	272.9500122	-191.0700073	Central America	CLOSED	Perfect Fitness Perfect Rip Deck	59.99000168	Same Day
3/18/2017 6:24:00 AM	-0.680000007	5	250	242.5	-164.8999939	Central America	CLOSED	Nike Men's Dri-FIT Victory Golf Polo	50	Same Day
7/23/2016 7:47:00 AM	-1.330000043	1	129.9900055	120.8899994	-161.1499939	US Center	CLOSED	Nike Men's CJ Elite 2 TD Football Cleat	129.9900055	Same Day

8.2. UTILIZATION OF DATA FILTERS

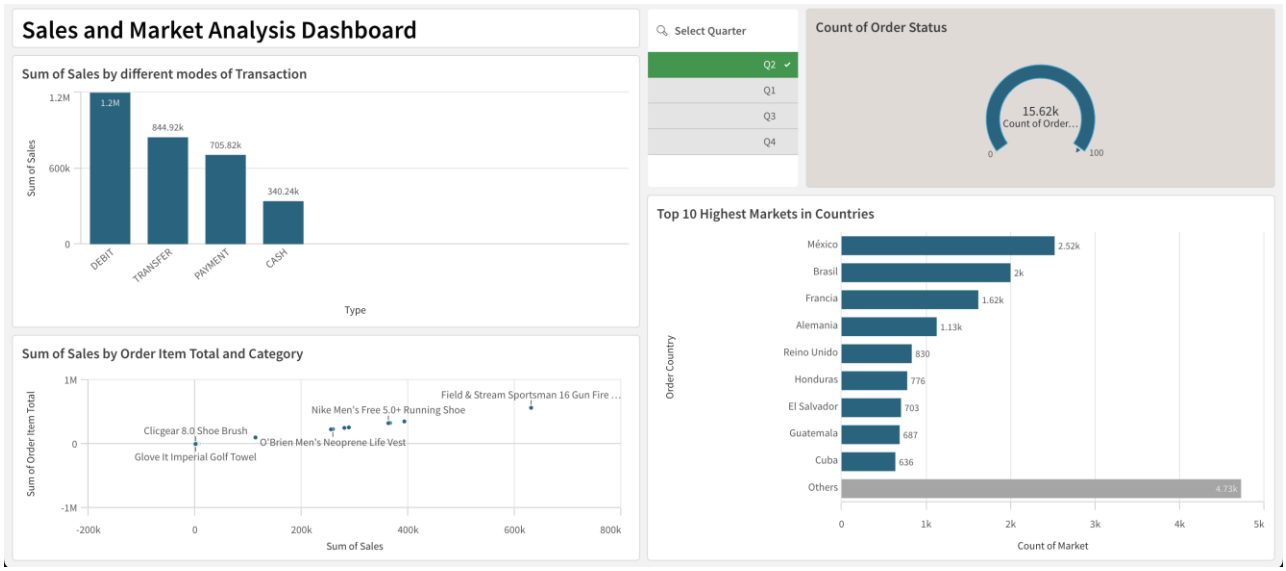


Fig-13: Quarter 2 filter

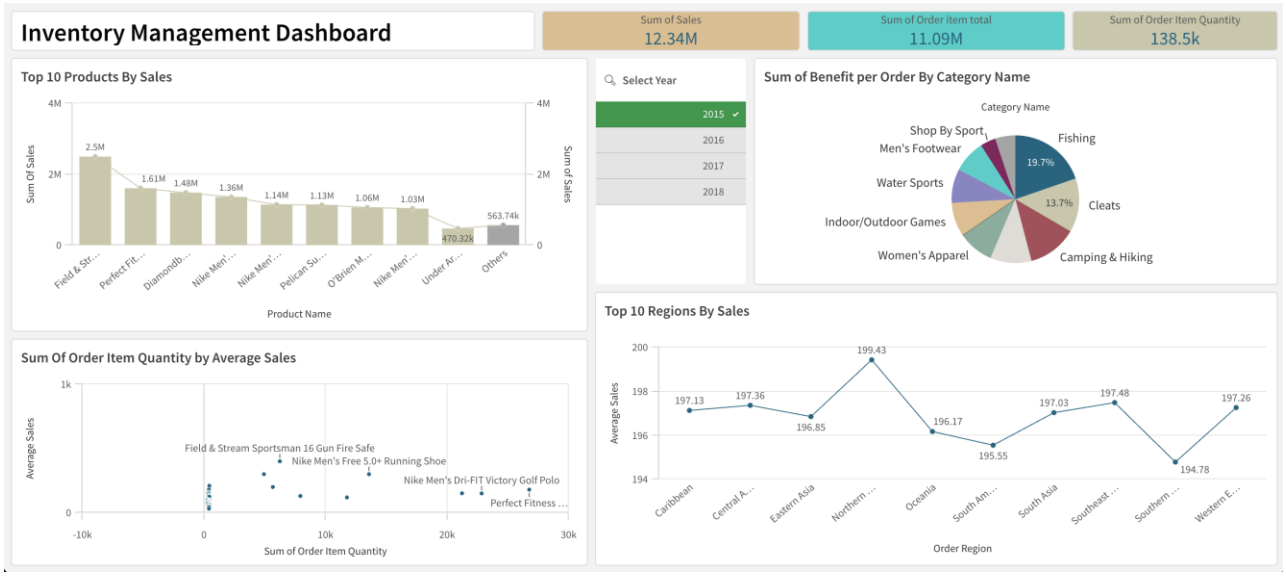


Fig-14: 2015 year filter

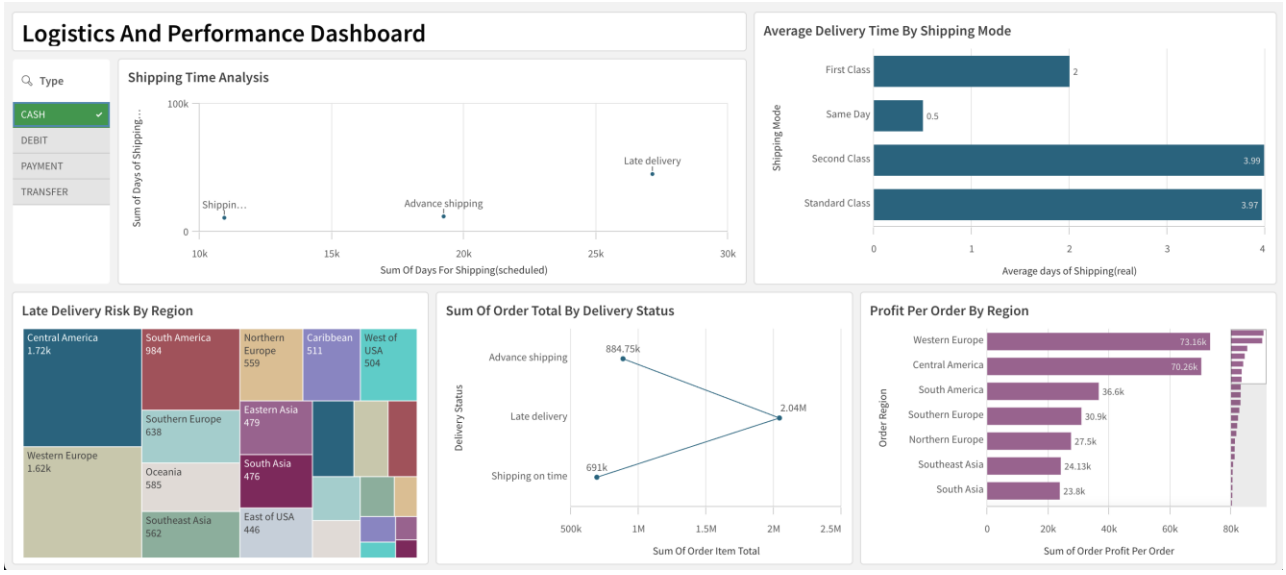


Fig-15: Cash Mode filter

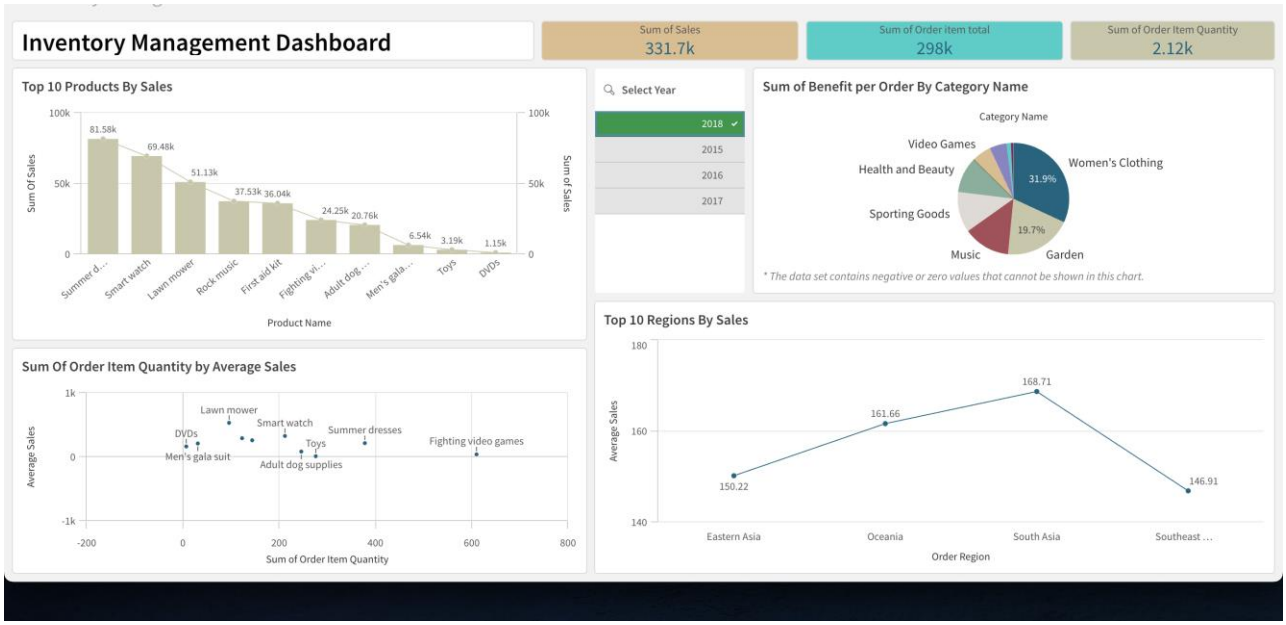


Fig-16: 2018 year filter

8.3. No Of Visualizations/Graphs:

- **Late Delivery Risk by Region.**
- **Sum of Order Item Total by Delivery Status.**
- **Profit per Order by Region.**
- **Average Delivery Time by Shipping Mode.**
- **Shipping Time Analysis.**
- **Sum of Benefit per Order by Different Category.**
- **Top 10 Regions by Sales.**
- **Sum of Order Item Quantity by Average Sales.**
- **Top 10 Products by Sum of Sales.**
- **Sum of Sales by Different Modes.**
- **Sum of Sales by Order Item Total and Category.**

Conclusion:

From this analysis, there are a few key learnings and improvements to be made in the supply chain through advanced analytics software like Qlik: visibility, transportation route optimization, and inventory management. Sales analysis indicates varying performance trends, which show Top 10 products based on Sales during 4 years, requiring strategic adjustments. Risk associated with different modes of payment helps in mitigating delays and improving customer satisfaction. Overall, the adoption of efficient data integration, real-time tracking, and responsive analytics will significantly improve our operational efficiency and responsiveness, placing us better in the competitive market landscape.