

Project Report

Innovations in Supply Chain

Management with qlik Insights

1. Introduction:

This project aims to revolutionize supply chain management through data-driven insights using qlik. Leveraging advanced analytics, it seeks to optimize logistics, forecasting, and inventory management, enhancing operational efficiency and responsiveness.

1.1 Overview:

This transformative project endeavours to reshape the landscape of supply chain management by harnessing the power of Qlik's data-driven insights. Employing cutting-edge analytics, it strives to revolutionize key facets such as logistics, forecasting, and inventory management, with the overarching goal of elevating operational efficiency and responsiveness to new heights.

1.2 Purpose:

Qlik's advanced analytics features to analyse historical logistics data, identify patterns, and optimize transportation routes. Implement real-time tracking and monitoring solutions to enhance visibility into the movement of goods, reduce lead times, and minimize transportation costs. Implement real-time analytics to facilitate quick decision-making in response to unforeseen events or changes in demand, ensuring a proactive and responsive supply chain.

1.3 Technical Architecture:

The study emphasizes the positive impact on logistics optimization, forecasting accuracy, and inventory management efficiency. Moreover, it delves into the broader landscape of data-driven supply chain

transformations, exploring diverse analytical techniques and technologies. The findings showcase successful implementations, demonstrating notable improvements in operational efficiency and responsiveness across various industry sectors. In addition, it examines the challenges and opportunities associated with the adoption of data-driven insights in supply chain contexts. The literature emphasizes the need for organizations to develop robust data governance frameworks and cultivate a data-driven culture to fully unlock the potential benefits.

2. Problem Understanding:

- *Create visualizations to showcase the demographic distribution of Supply chain management*
- *Explore any correlations between usage and improvements.*
- *Analyse how Data-Driven Innovations in Supply Chain Management have affected businesses, especially in sectors like banking, telecommunications, and e-commerce.*
- *Evaluate the impact of Data-Driven Innovations in Supply Chain Management on sales, customer onboarding, and operational efficiency.*

2.1 Business problem:

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2.2 Business requirements:

Implement a robust data integration strategy to aggregate and centralize relevant data from diverse supply chain sources. Utilize Qlik's advanced visualization capabilities to create intuitive and dynamic dashboards,

providing stakeholders with clear insights into the entire supply chain ecosystem

2.3Literature Survey:

A literature survey on the project theme of revolutionizing supply chain management through data-driven insights and advanced analytics reveals a growing body of research and scholarly articles focused on similar endeavours. Studies underscore the increasing recognition of the pivotal role that data analytics plays in transforming traditional supply chain processes. Research highlights the effectiveness of leveraging advanced analytics tools, such as Qlik, to enhance visibility and decision-making in supply chain operations.

3.Data collection:

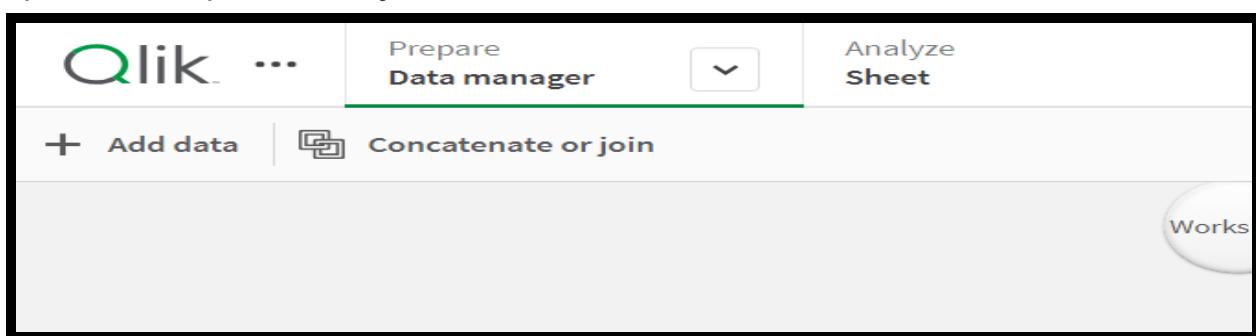
Data collection is the process of gathering and measuring information on variables of interest in an established, systematic fashion that enables one to answer stated research questions, test hypotheses, evaluate outcomes, and generate insights from the data.

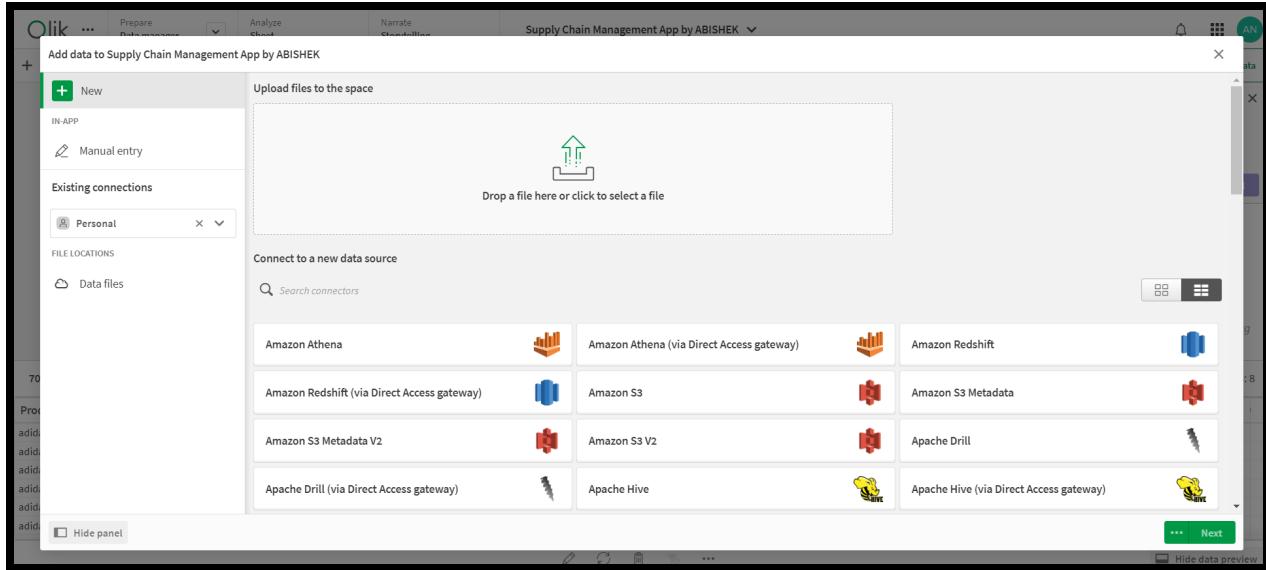
3.1Collect the dataset:

Dataset can be collected by downloading the dataset by click the link in the dataset icon.After done the kaggle login your files will be download then,you need to upload it into the github page.

3.2Collect the data with qlik sense:

Then open the Qlik cloud by login into it.And, then extract the file to upload into qlik cloud by click on +Add data.





4.Data Preparation:

Preparing the data for visualization involves cleaning the data to remove irrelevant or missing data, transforming the data into a format that can be easily visualized, exploring the data to identify patterns and trends, filtering the data to focus on specific subsets of data, preparing the data for visualization software, and ensuring the data is accurate and complete.

4.1 Prepare the data for Visualization:

The preparation of data visualization is the process that helps to make the data easily understandable and ready for creating visualizations to gain insights into performance and efficiency. Since the data is already cleaned, we can move to visualization.

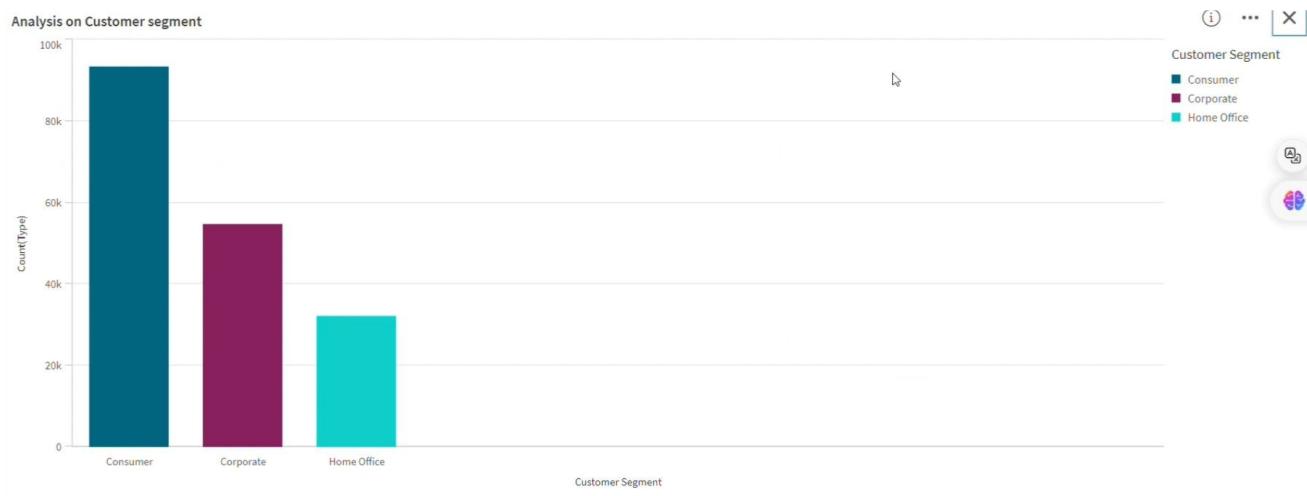
Type	Days for shi...	Days for shi...	Benefit per o...	Sales per cu...	Delivery Status	Late_deliver...	Category Id	Category Name	Customer City
CASH	0	0	-1088.949951	395.980011	Shipping on time	0	45	Fishing	Winter Park
CASH	0	0	-854.960022	379.980011	Shipping on time	0	45	Fishing	Buena Park
CASH	0	0	-652.7700195	383.980011	Shipping on time	0	45	Fishing	West Haven
CASH	0	0	-595.1699929	383.980011	Shipping on time	0	45	Fishing	Princeton
CASH	0	0	-594.9699707	339.980011	Shipping on time	0	45	Fishing	Caguas
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5.Data Visualization:

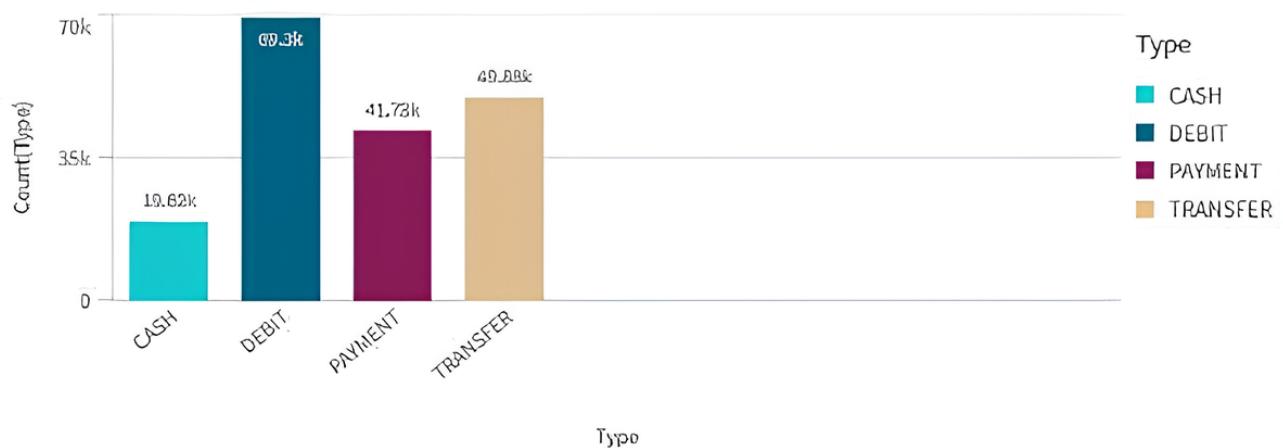
The number of unique visualizations that can be created with a given dataset. Some common types of visualizations that can be used to analyse the performance and efficiency of banks include bar charts, line charts, heat maps, scatter plots, pie charts, Maps, etc.

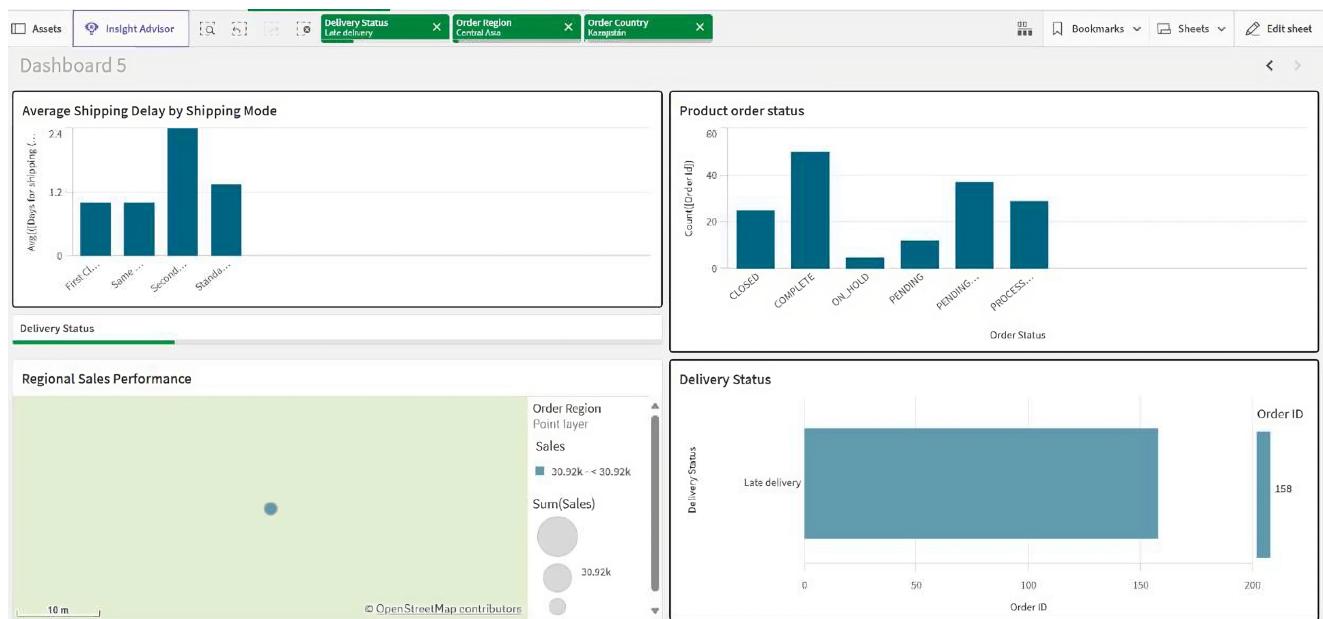
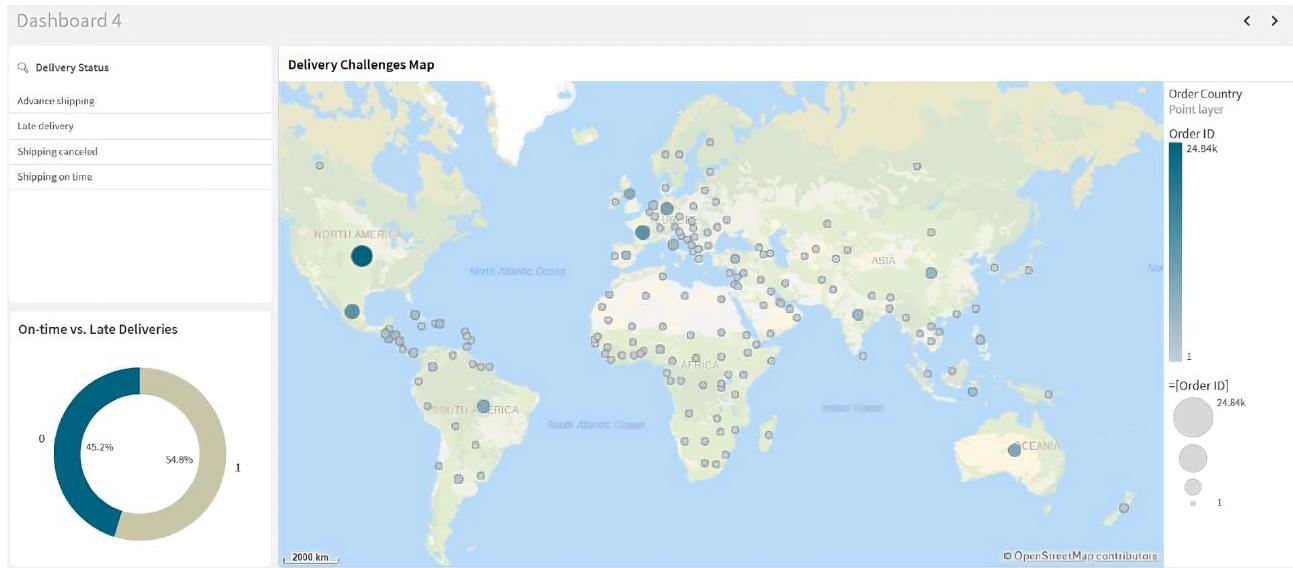
5.1 Visualization:

These visualizations can be used to compare performance, track changes over time, show distribution and relationships between variables, breakdown of revenue and customer demographics, workload, resource allocation, and location of banks.



Mode of Payment



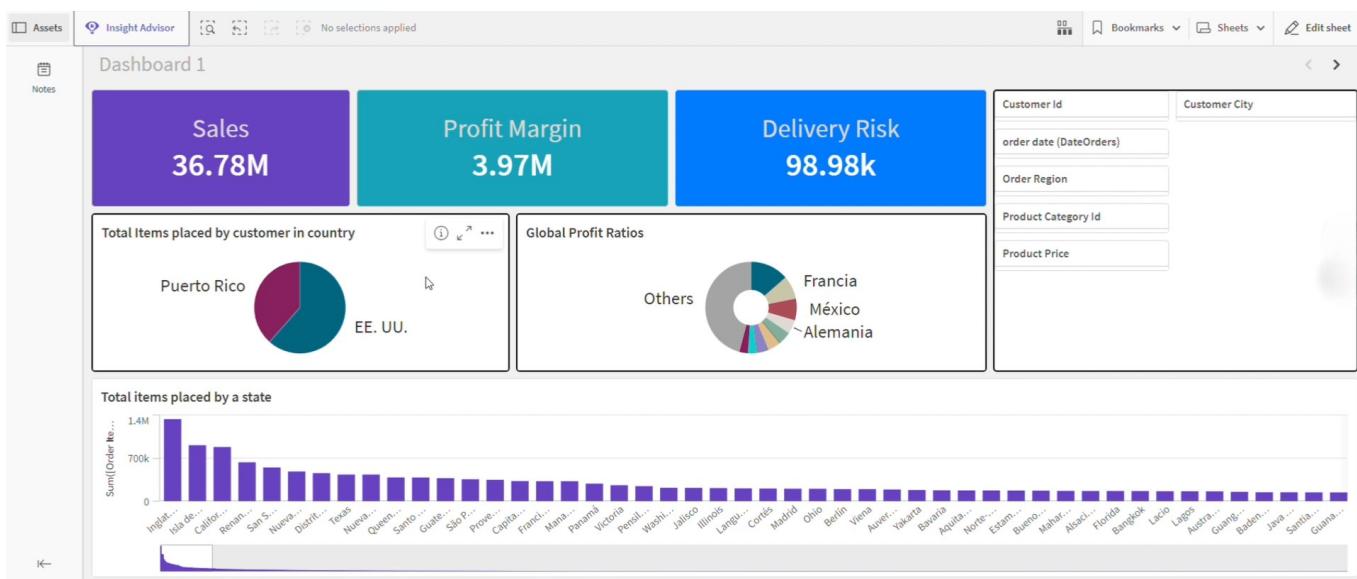


6.Dashboard:

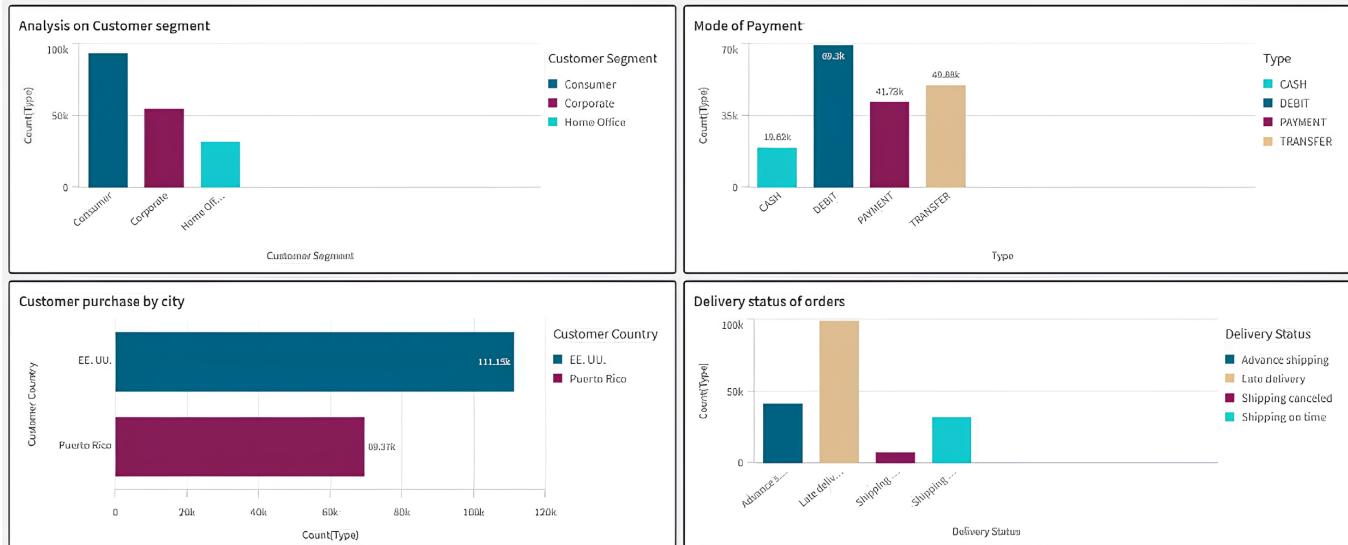
A dashboard is a graphical user interface (GUI) that displays information and data in an organized, easy-to-read format. Dashboards are often used to provide real-time monitoring and analysis of data and are typically designed for a specific purpose or use case. Dashboards can be used in a variety of settings, such as business, finance, manufacturing, healthcare, and many other industries.

6.1 Response and design of Dashboard:

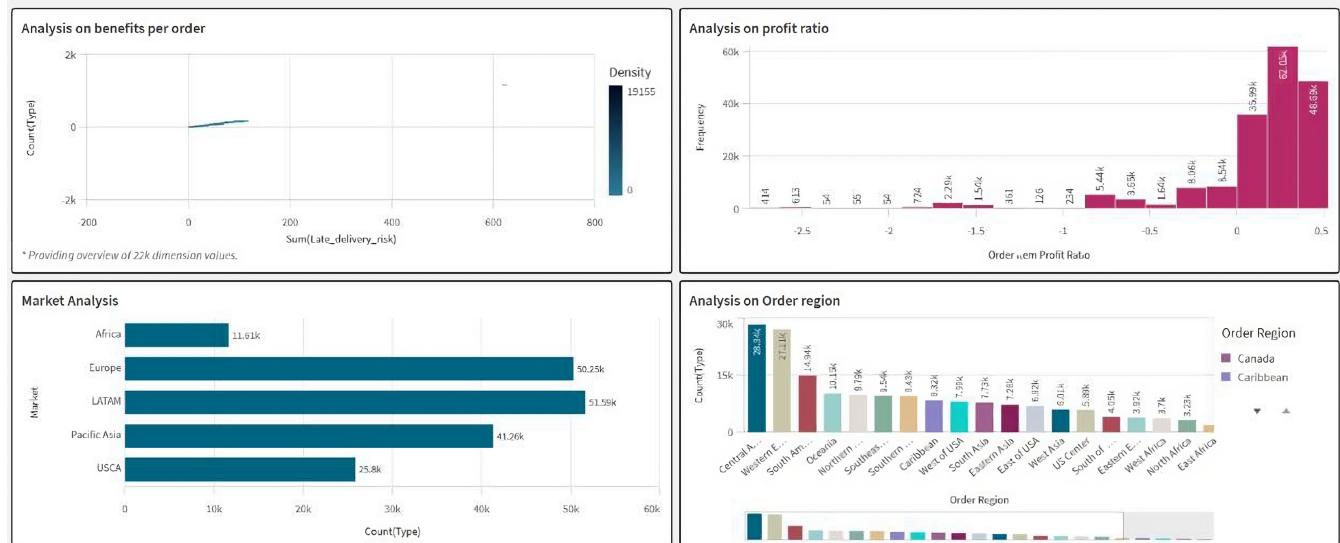
Dashboard can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.



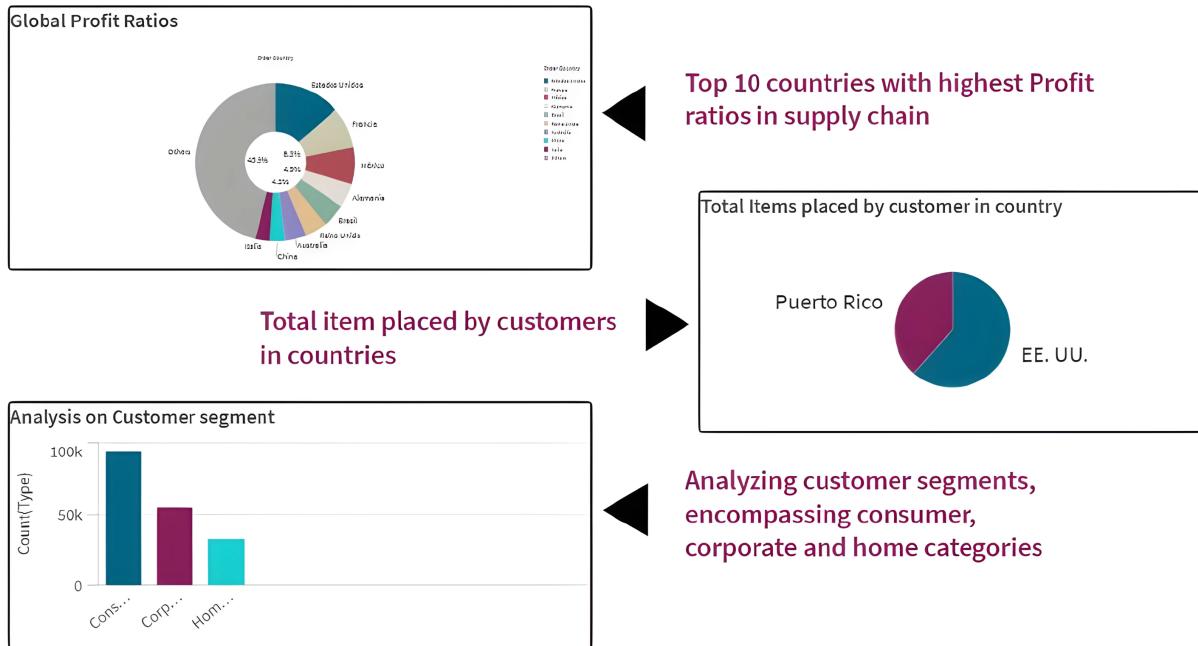
Dashboard 2



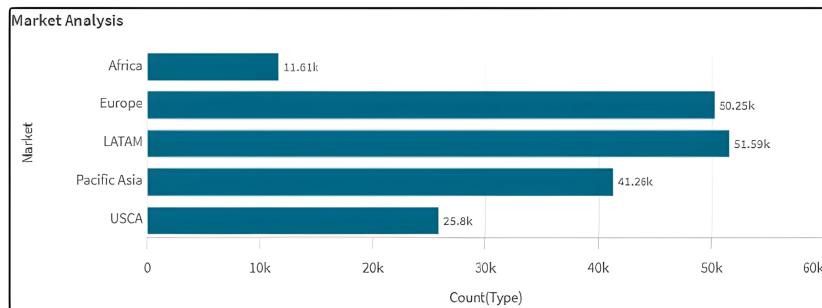
Dashboard 3

**7 STORY:**

A data story typically includes a clear introduction that sets the stage and explains the context for the data, a body that presents the data and analysis in a logical and systematic way, and a conclusion that summarizes the key findings and highlights their implications. Data stories can be told using a variety of mediums, such as reports, presentations, interactive visualizations, and videos.



Market Analysis



- Analyzing markets across Africa, Europe, LATAM, Pacific Asia, and USCA provides valuable insights into regional economic landscapes, consumer behaviors, and market dynamics.
- This comprehensive assessment aids in making informed decisions by understanding regional conditions and consumer preferences.
- Utilize these insights to develop tailored marketing strategies and targeted expansion efforts, capitalizing on opportunities in each market.

Performance Testing

Amount of Data Loaded:

The amount of data loaded refers to the quantity or volume of data that has been imported, retrieved, or loaded into the Qlik system. This measure indicates how much data has been successfully processed and made available for analysis. It is crucial for ensuring that the system can handle large datasets efficiently without compromising performance. Effective management of data volume is essential to provide timely insights and maintain system responsiveness.

Utilization of Filters:

Utilization of filters involves the application of various filters within the Qlik system to selectively extract, manipulate, or analyze data based on specific criteria. Filters are employed to narrow down the scope of data, focusing only on the relevant information that meets predefined conditions. This process enhances the precision of data analysis, allowing users to derive more meaningful insights by concentrating on specific segments of the dataset.

Number of Calculation Fields:

The number of calculation fields refers to the various computed fields or derived metrics used in the Qlik project. These fields are essential for performing complex calculations and analyses on the dataset. Assessing the impact of these calculation fields on overall performance is critical, as excessive or inefficient calculations can slow down data processing and affect the user experience.

Number of Visualizations/Graphs:

The number of visualizations or graphs represents the different visual components used to display data insights in the Qlik project. Analyzing the performance implications of these visual elements is important, as they play a significant role in data interpretation. A balanced approach ensures that the visualizations are informative and interactive without overwhelming the system.

Project Demonstration & Documentation

Record Explanation Video for Project End-to-End Solution:

A comprehensive video demonstration showcasing the entire Qlik data analytics supply chain project will be created. This video will cover each phase of the project, from data ingestion and preparation to analysis and visualization. The demonstration will highlight the functionality and benefits of the Qlik solution in optimizing supply chain management, emphasizing how the system handles large datasets, applies filters, and generates insightful visualizations.

Project Documentation - Step-by-Step Project Development:

Detailed project documentation will be developed to outline each step of the project's development. This documentation will serve as a guide for understanding the implementation process, covering topics such as data preparation, the application of filters, the creation of calculation fields, and the development of visualizations. It will provide a clear and structured approach to replicating and understanding the project's methodology.

For more detailed information and to access the project files, please visit the project's GitHub repository.

Analysis Topics and Subtopics

Global Profit Ratios:

Analysis of global profit ratios involves examining the profitability metrics across different regions and markets. This analysis helps in understanding the overall financial health and performance of the supply chain on a global scale.

Total Items Placed by Customer in Country:

This analysis focuses on the total number of items ordered by customers within a specific country. It provides insights into customer demand and purchasing behavior at a national level.

Total Items Placed by a State:

Similar to the country-level analysis, this subtopic breaks down the total number of items ordered by customers at the state level. It helps in identifying regional trends and demand variations.

Analysis on Customer Segment:

This analysis categorizes customers into different segments based on their purchasing behavior, preferences, and demographics. Understanding customer segments allows for targeted marketing strategies and personalized customer service.

Mode of Payment:

The mode of payment analysis examines the different payment methods used by customers, such as cash, debit cards, and electronic transfers. It helps in understanding customer preferences and the impact of payment methods on sales and transaction efficiency.

Customer Purchase by City:

This analysis focuses on the number of items purchased by customers in different cities. It provides insights into urban purchasing trends and helps in regional market analysis.

Delivery Status of Orders:

Analyzing the delivery status of orders involves tracking the fulfillment process, identifying delays, and ensuring timely delivery. This subtopic is crucial for maintaining customer satisfaction and improving logistics efficiency.

Analysis on Benefit per Order:

This analysis calculates the benefits or profits generated per order. It helps in assessing the profitability of individual transactions and optimizing pricing strategies.

Analysis on Profit Ratio:

Examining the profit ratio involves comparing profits to overall costs and revenues. It provides a comprehensive view of financial performance and helps in strategic decision-making.

Market Analysis:

Market analysis involves studying the overall market trends, competition, and consumer behavior. This broader perspective helps in identifying opportunities and challenges in the market.

Analysis on Order Region:

This subtopic focuses on the geographic regions where orders are placed. It helps in understanding regional demand patterns and optimizing supply chain operations to meet local needs effectively.