PROJECT REPORT

Data-Driven Innovations in Supply Chain Management with Qlik Insights

INTRODUCTION

OVERVIEW: A BRIEF DESCRIPTION ABOUT THE PROJECT

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.

This transformative project endeavors 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.

PROBLEM UNDERSTANDING

SPECIFY THE BUSINESS PROBLEM

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. This transformative project endeavors 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.

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. Leverage 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, reducing lead times and minimizing 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.

LITERATURE 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 endeavors. 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. The study emphasizes the positive impact on logistics optimization, forecasting accuracy, and inventory management efficiency. Moreover, 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, 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.

SOCIAL/BUSINESS IMPACT

Social Impact Analysis:

- Create visualizations to showcase the demographic distribution of Supply chain management

- Analyze how Data-Driven Innovations in Supply Chain Management have impacted social welfare programs, financial inclusion, and other key areas.
- Explore any correlations between usage and improvements.

Business Impact Analysis:
- Analyze 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.

DATA COLLECTION

Collected the dataset from kaggle
LINK:-https://www.kaggle.com/datasets/shashwatwork/dataco-smart-supply-chain-for-big-data-analysis/data

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. This process 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.
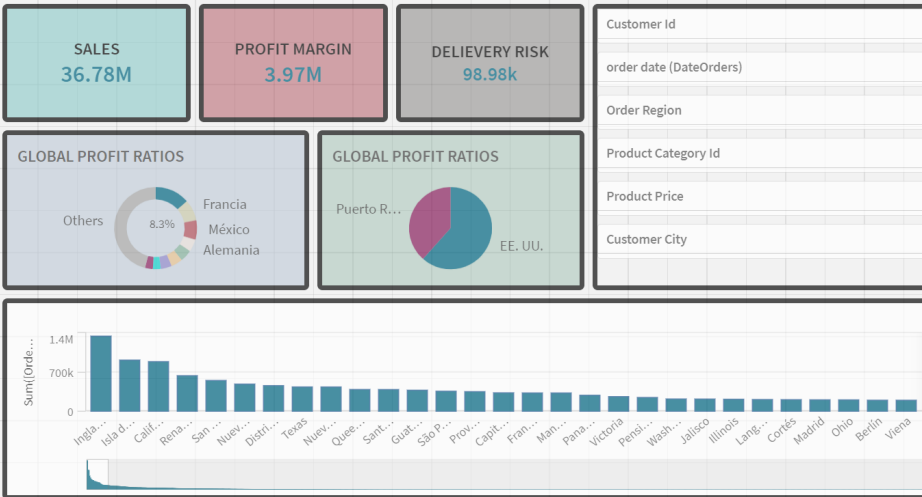
DATA VISUALIZATION

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. 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.

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. They can be used to track key performance indicators (KPIs), monitor performance metrics, and display data in the form of charts, graphs, and tables.
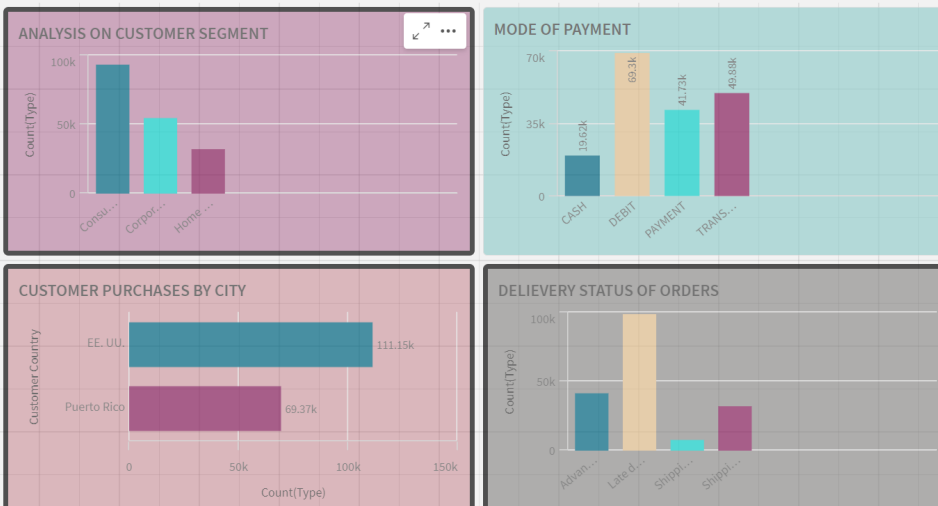
Dashboard1

Advanced options

SALES	PROFIT MARGIN	DELIEVERY RISK
36.78M	3.97M	98.98k

Customer Id
order date (DateOrders)
Order Region
Product Category Id
Product Price
Customer City

GLOBAL PROFIT RATIOS

Others 8.3%
Francia
México
Alemania

GLOBAL PROFIT RATIOS

Puerto R...
EE. UU.

Sum(Orde...
1.4M
700k

Ingla... Isla d... Calif... Rena... San... Nuev... Distri... Texas Nuev... Quee... Sant... Guat... São P... Prov... Capit... Fran... Man... Pana... Victoria Pensi... Wash... Jalisco Illinois Lang... Cortés Madrid Ohio Berlin Viena

Dashboard2

Advanced options

ANALYSIS ON CUSTOMER SEGMENT

Count(Type)
100k
50k
0
Consu... Corpor... Home...

MODE OF PAYMENT

Count(Type)
70k
35k
0
CASH 19.62k
DEBIT 69.3k
PAYMENT 41.73k
TRANS... 49.83k

CUSTOMER PURCHASES BY CITY

Customer Country
EE. UU. 111.15k
Puerto Rico 69.37k
0 50k 100k 150k
Count(Type)

DELIEVERY STATUS OF ORDERS

Count(Type)
100k
50k
0
Advan... Late d... Shippl... Shippl...

DASHBOARD3

Advanced options

ANALYSIS OF BENIFIT PER ORDER

Count(Type)
2k
0
-500 0 500 1k
Sum(Late_delivery_risk)

* Providing overview of 22k dimension values.

ANALYSIS OF PROFIT RATIO

Frequency
60k
40k
20k
0
-2 -1 0
Order Item Profit Ratio

MARKET ANALYSIS

Market
Africa 11.61k
Europe 50.25k
LATAM 51.59k
Pacific Asia 41.26k
USCA 25.8k
0 20k 40k 60k
Count(Type)

ANALYSIS ON ORDER REGION

Order Region
Central America 28.34k
Western Europe 27.11k
South America 14.94k
Oceania 10.15k
0 10k 20k 30k
Count(Type)

REPORT

Report is created in detail on dahsboard and its storytelling visualization.

PERFORMACE TESTING

Performance is tested on these measures:-

- Amount of data loaded
- Utlization of filters

"Amount of Data Loaded" refers to the quantity or volume of data that has been imported, retrieved, or loaded into a system, software application, database, or any other data storage or processing environment. It's a measure of how much data has been successfully processed and made available for analysis, manipulation, or use within the system.

"Utilization of Filters" refers to the application or use of filters within a system, software application, or data processing pipeline to selectively extract, manipulate, or analyze data based on specified criteria or conditions. Filters are used to narrow down the scope of data, focusing only on the relevant information that meets certain predefined criteria.