

Report

**Data-Driven Innovations in Supply Chain Management with
Qlik Insights**

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Submitted To:

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1.Abstract

With the help of Qlik, this project seeks to transform supply chain management through data-driven insights. It aims to improve operational responsiveness and efficiency by optimizing inventory management, forecasting, and logistics through the use of sophisticated analytics. Using Qlik's data-driven insights, this innovative project aims to completely change the supply chain management industry. By utilizing advanced analytics, it aims to transform important aspects like inventory management, forecasting, and logistics, ultimately increasing operational responsiveness and efficiency to unprecedented levels.

2.Introduction

Qlik Sense Desktop is a robust data analytics and visualization tool that allows users to create interactive and informative dashboards. This project leverages Qlik Sense Desktop to analyse an supply dataset, focusing on key performance metrics such as total product category , product ratios, Customer purchase and delivery status . By visualizing this data, we aim to uncover patterns and insights that can inform strategic decision-making in the supply industry.

3.Business Requirement

Develop a strong data integration plan to compile and organize pertinent information from various supply chain sources. Make use of Qlik's sophisticated visualization features to build dynamic, user-friendly dashboards that provide stakeholders a comprehensive understanding of the supply chain ecosystem. Utilize Qlik's sophisticated analytics functionalities to examine past logistics data, detect trends, and enhance transportation routes. Reduce lead times and transportation costs by implementing real-time tracking and monitoring technologies to improve visibility into the flow of items. Utilize real-time analytics to enable prompt decision-making in the event of unanticipated circumstances or shifts in demand, guaranteeing a proactive and adaptable supply chain.

4.Literature Survey

A review of the literature on the project theme of using sophisticated analytics and data-driven insights to revolutionize supply chain management indicates a growing corpus of scholarly articles and research devoted to such projects. Research highlights the growing acknowledgement of the critical function that data analytics performs in revolutionizing conventional supply chain procedures. Empirical studies demonstrate the efficacy of utilizing sophisticated analytics instruments, like Qlik, to augment transparency and facilitate decision-making within supply chain management. The study highlights the beneficial effects on inventory management effectiveness, forecasting accuracy, and logistics optimization. explores a variety of analytical methods and technological advancements as it digs deeper into the larger picture of data-driven supply chain changes. The results highlight effective implementations and show appreciable increases in responsiveness and operational efficiency across a range of industry sectors. Additionally, looks at the difficulties

5.Data Collection

5.1 Setup and Installation

Creating an Account and Downloading Qlik Sense Desktop

5.1.1 Login and Account Creation:

1. Access the Qlik Sense website(<https://www.qlik.com/us/try-or-buy/download-qlik-sense>) and create a new account.
2. Download the Qlik Sense Desktop unlock file.

5.1.2 File Placement:

1. Navigate to the directory: `C:\Users\Jani\Documents\Qlik\Sense\trial`.
2. Paste the downloaded desktop unlock file in this directory.

5.1.3 Launching Qlik Sense Desktop:

1. Open the Qlik Sense Desktop application.
2. App Creation and Data Upload

5.2 Create a New App and Upload Data:

5.2.1 Create a New App:

1. Click on the "Create App" button to start a new project.

5.2.2 Upload the Data File:

1. Go to Skill Wallet and download the project flow data set.
2. In Qlik Sense, upload this data set into the new app. Ensure the dataset is embedded correctly to use the first row as headers if it is not done automatically.

6. 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.

Removing Duplicates and Null Values

Data Load Editor:

1. Go to the 'Prepare' tab and open the Data Load Editor.
2. Modify the default Qlik script to handle duplicates and null values as per the requirements.

7.Data Visualization

The process of turning data sets into graphical representations that are simple to read and navigate is known as data visualization. Data visualization increases the usability and accessibility of complicated information by utilizing graphs, charts, and maps. For example, a line chart can show patterns in website traffic over time, while a bar chart can be used to compare sales numbers across different locations. When determining the associations between variables, such as how a customer's income may affect their shopping habits, scatter plots can be helpful.

More than merely displaying the data is involved in effective data visualization. It makes use of design principles to guarantee lucidity and prevent misunderstandings. For the best

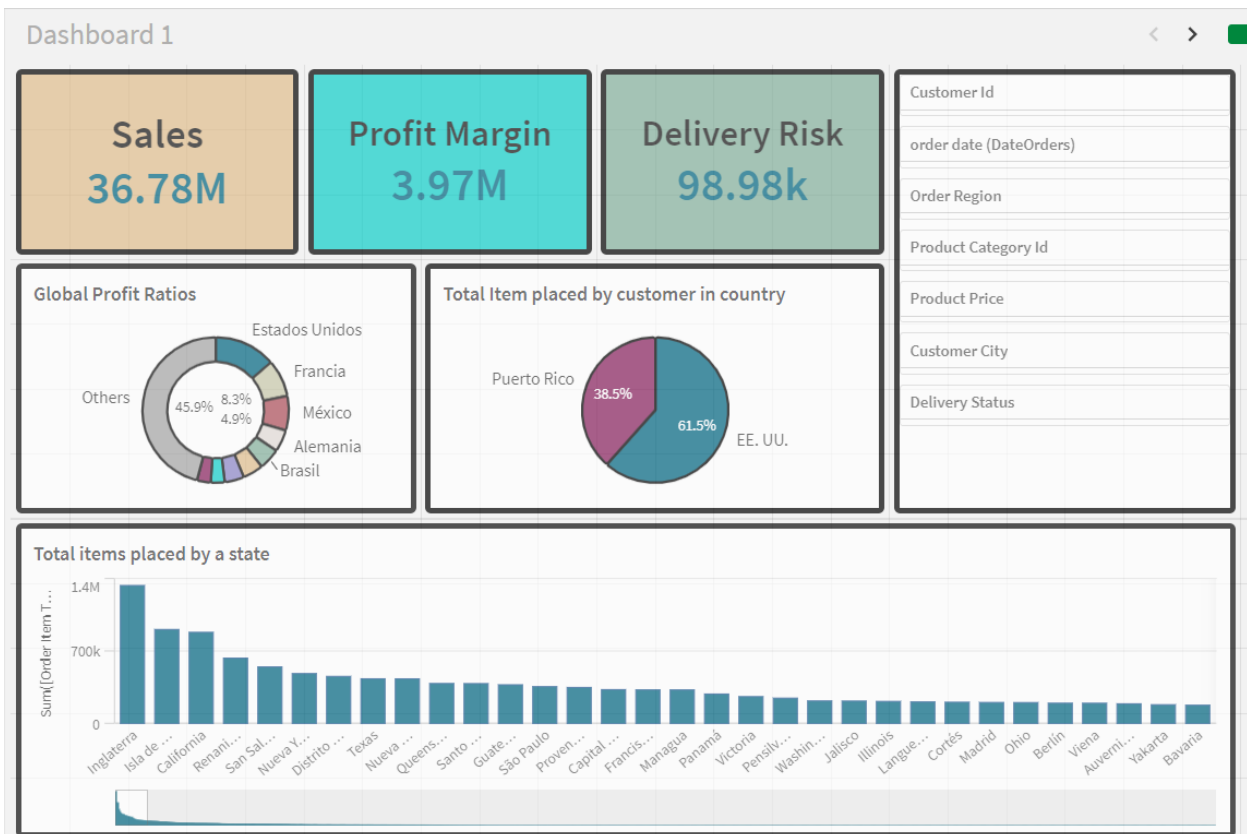
communication, labels must be clear and succinct, color schemes should be carefully picked, and visual style should be consistent. Pages of text can be replaced with a well-designed data visualization, giving viewers

8. Dashboard and Storytelling

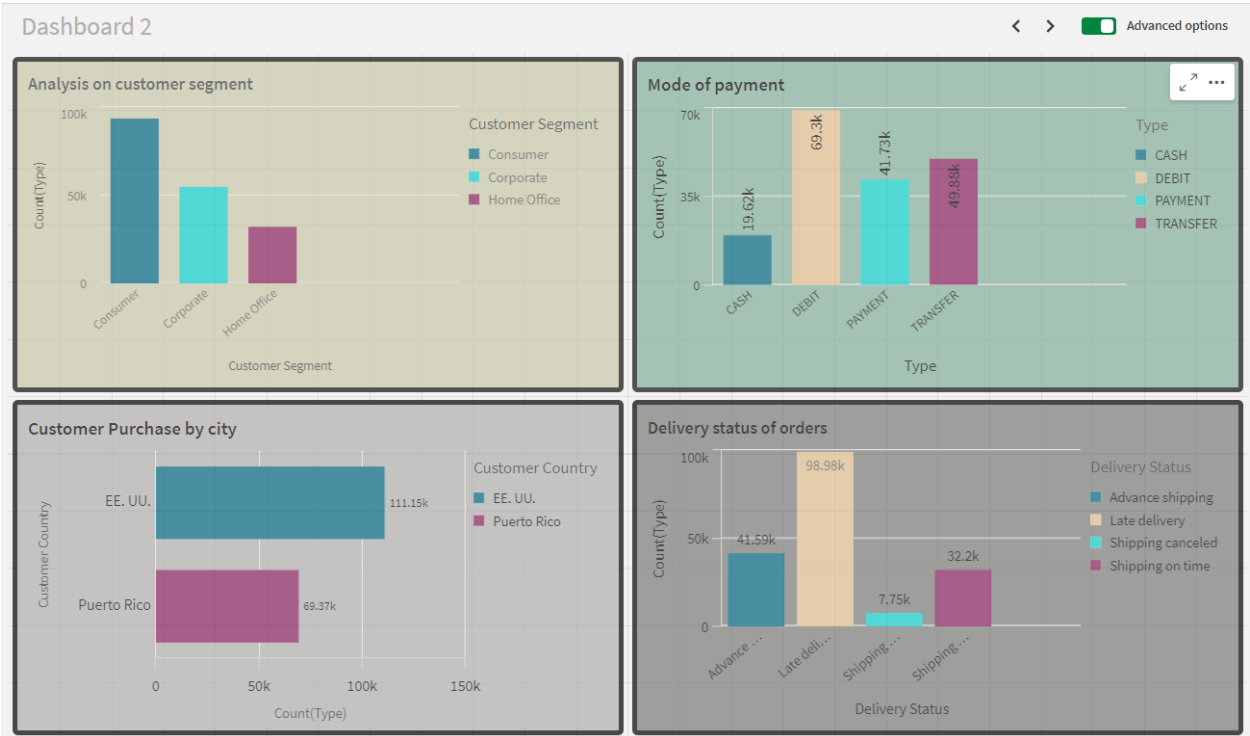
8.1 Design Dashboards:

1. Create two dashboards, aligning the visualizations and key performance indicators effectively.

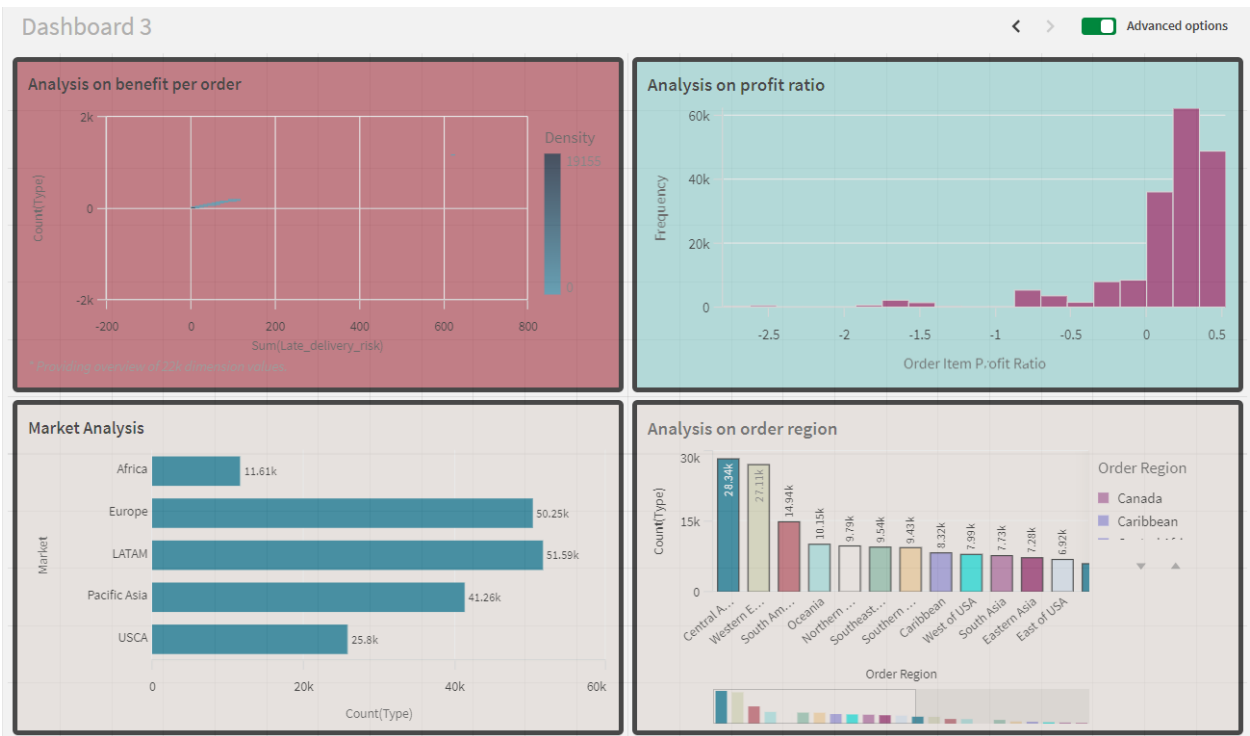
1.DASHBOARD 1



Dashboard 2:



Dashboard 3:

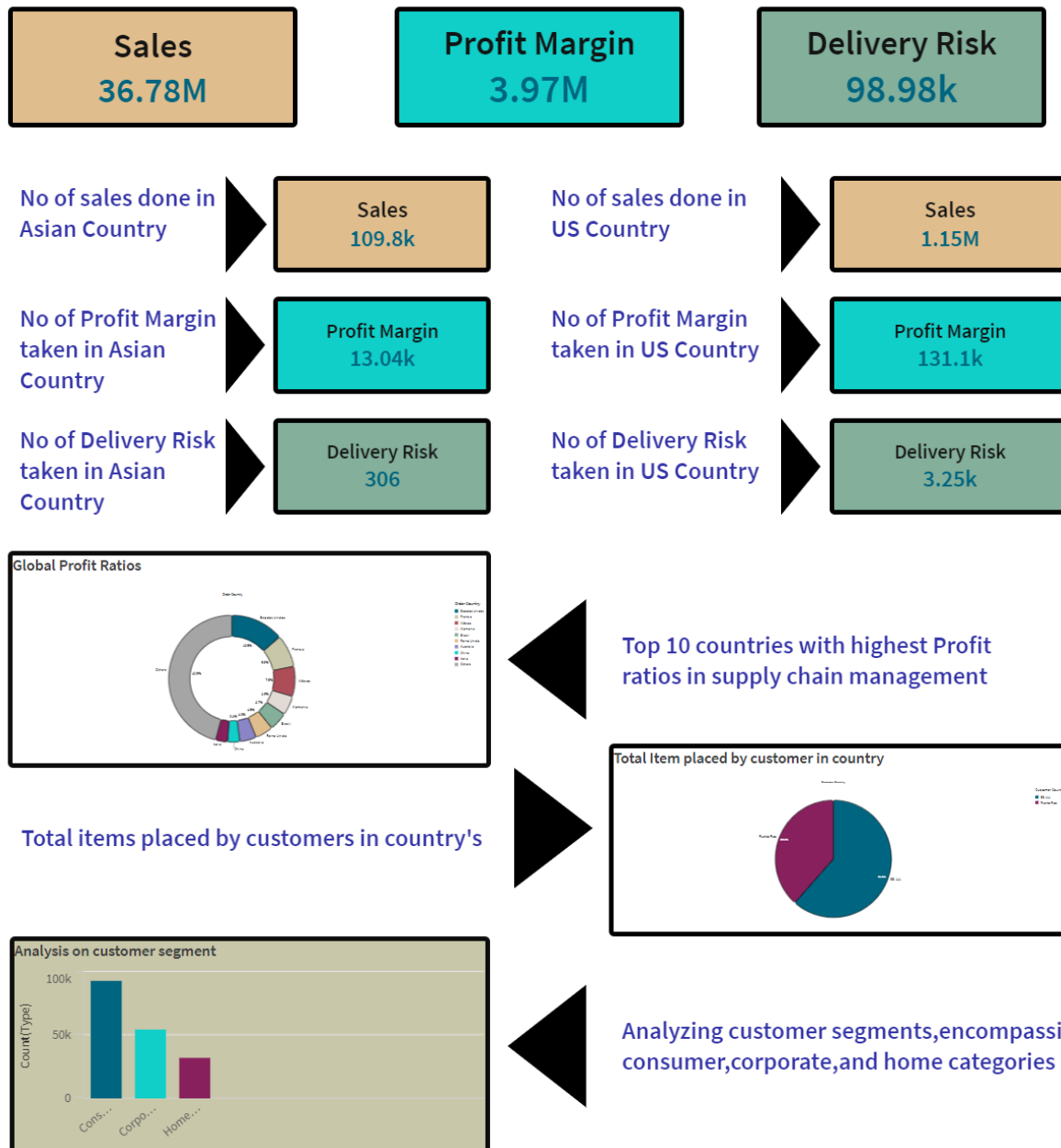


8.2 Create a Story:

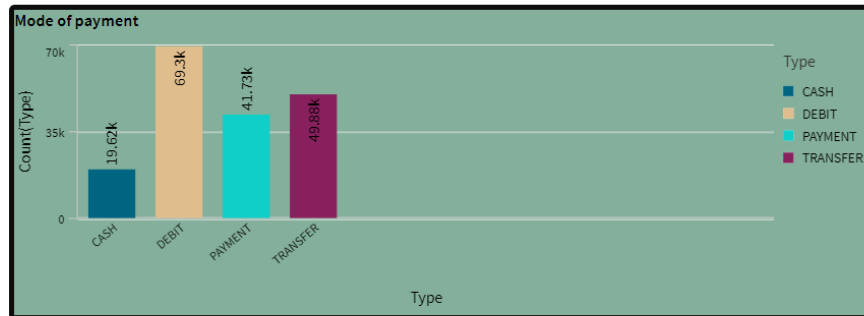
1. Use the storytelling feature in Qlik Sense to create a presentation (PPT).
2. Include the visualizations and narrative to explain the insights derived from the data.

STORY

Supply Chain Management Analysis Story.

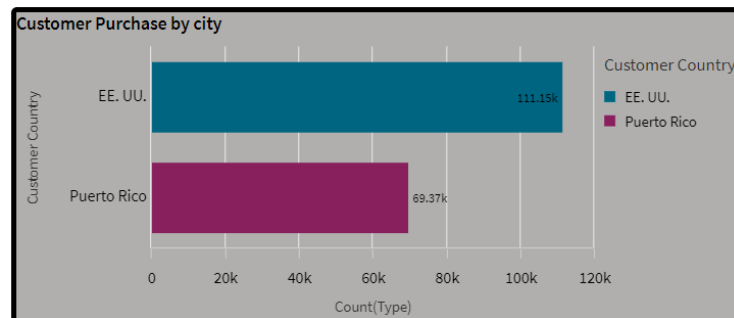


Mode of Payment for Purchase



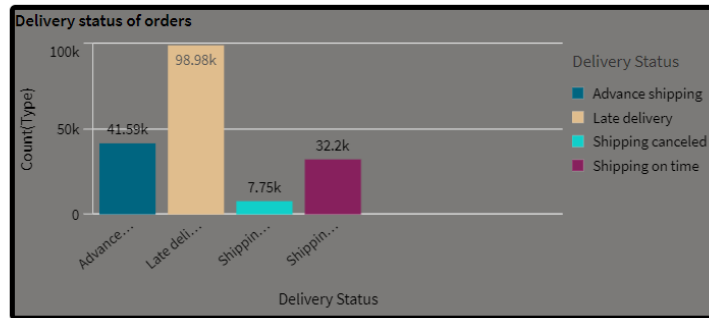
- ✓ Cash transactions offer immediate liquidity, providing a straightforward and tangible method of payment.
- ✓ Debit payments, directly linked to bank accounts, offer convenience and real-time deduction of funds
- ✓ Credit payments provide a deferred payment option, allowing customers to make purchases
- ✓ Transfer payments leverage electronic methods for seamless and secure fund

Customer purchase item by city



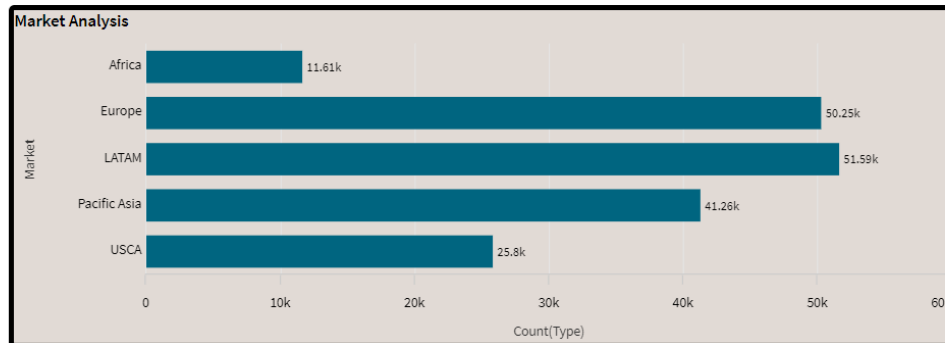
- ✓ Customer purchase count in Puerto Rico reflects the transactional dynamics in this vibrant location, capturing the local consumer behavior and market engagement.
- ✓ Customer purchase count in the United States provides a comprehensive overview of buying patterns across diverse cities

Delivery status of Orders



- ✓ Analyzing the delivery status of orders, including Advanced Shipping, Late Shipping, Shipping Canceled, and Shipping on Time.
- ✓ This allows businesses to evaluate the efficiency of their logistics operations, address potential delays, and enhance customer satisfaction.
- ✓ Ensuring timely and reliable deliveries based on varied shipping scenarios

Global Market Analysis



- ✓ Conducting a market analysis across Africa, Europe, LATAM (Latin America), Pacific Asia, and USCA (United States and Canada) enables businesses to gain strategic insights.
- ✓ Regional economic landscapes, consumer behaviors, and market dynamics.
- ✓ This comprehensive assessment supports informed decision-making, tailored marketing strategies, and targeted expansion efforts to capitalize on diverse opportunities within each distinct market

9. Performance Testing

"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.

10. Project Analysis and Scope

Analysis:

To guarantee data quality and obtain insightful information, the project data analysis process entails multiple processes. First, null values and duplicates are handled by preprocessing the raw data. After that, the data is organized to provide key performance indicators (KPIs) including the overall Customer purchase count, delayed, risk, and on-time delivery counts. 3 dashboards and other visualizations like them make it easier to comprehend how supply system is distributed throughout many continents. An in-depth examination of the operational performance and customer satisfaction is made easier by these visuals.

Scope:

The scope of this project encompasses the following areas:

1. Data Quality Improvement: Ensuring the accuracy and completeness of data by handling duplicates and null values.
2. Performance Measurement: Developing KPIs to monitor the performance of sales, including on-time performance, delays, and risks.
3. Geographical Analysis: Using visualizations to analyze sales performance across different continents, providing insights into regional performance variations.
4. Business Insights: Deriving actionable insights to improve operational efficiency, customer satisfaction, and strategic decision-making.
5. Dashboard Creation: Creating interactive dashboards that provide a comprehensive view of the sales performance.

6. Storytelling and Presentation: Using Qlik Sense's storytelling feature to create presentations that effectively communicate the insights derived from the data.

11.Conclusion

This report outlines the process of setting up Qlik Sense Desktop, preparing the data, creating visualizations, and compiling them into a cohesive story. The provided script and steps ensure a comprehensive approach to analyzing and presenting data effectively using Qlik Sense. The project analysis highlights the importance of data quality, performance measurement, and geographical analysis in deriving business insights and making informed decisions. The scope of the project demonstrates the potential of Qlik Sense in transforming raw data into valuable insights that can drive operational improvements and strategic planning.

GitHub link: