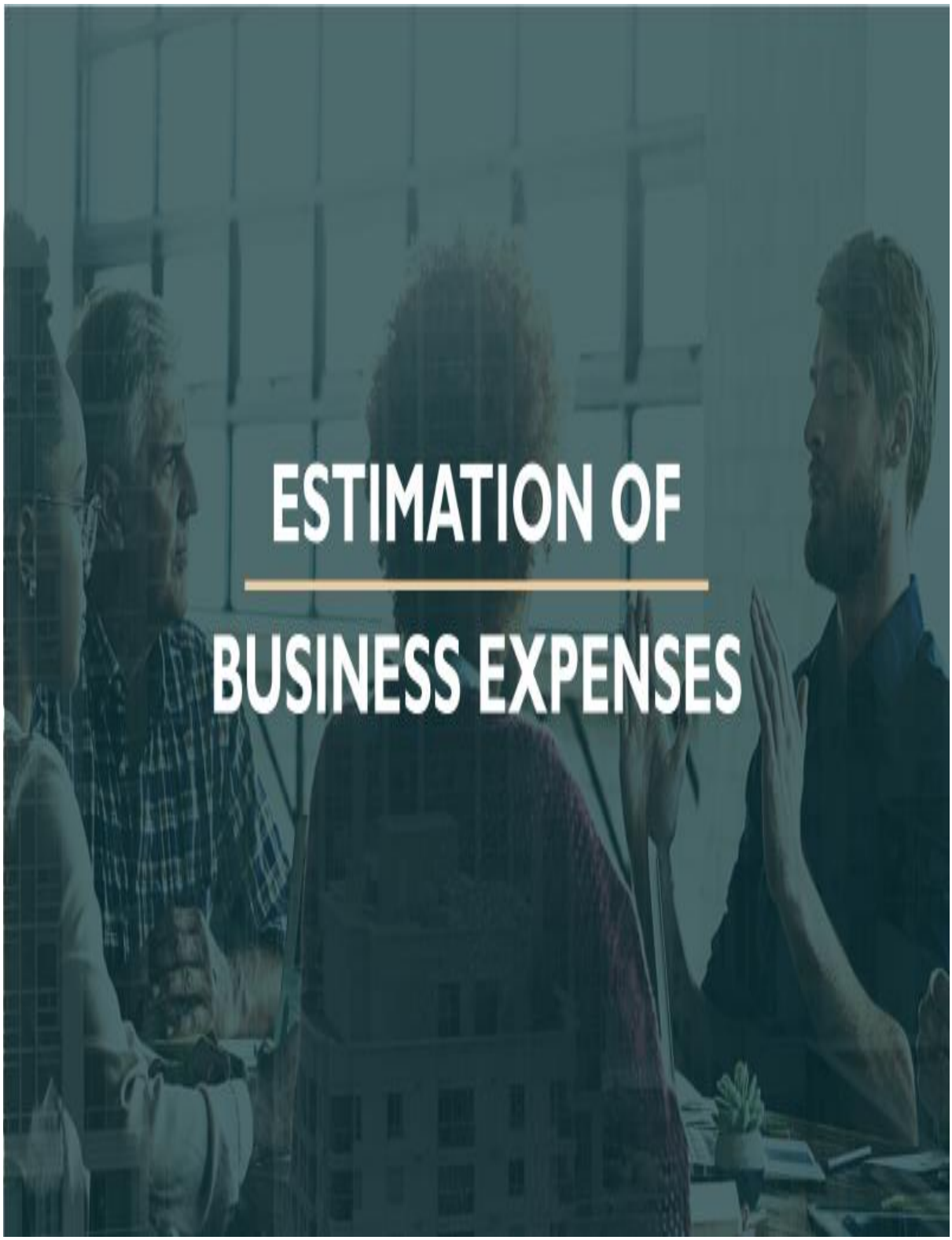
ESTIMATION OF
BUSINESS EXPENSES

Estimation of Business Expenses

A PROJECT REPORT

SUBMITTED TO THE
MANONMANIAM SUNDARANAR UNIVERSITY, TIRUNELVELI,
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
AWARD OF THE DEGREE IN

BACHELOR OF SCIENCE IN PHYSICS

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V.O. CHIDAMBARAM COLLEGE,

THOOTHUKUDI-628 008.

OCTOBER 2023

ACKNOWLEDGEMENT

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We also express our gratefulness to **Dr. C. Veerabahu M.Sc., Ph.D., The Principal,** for giving us the permission to do the project work.

We extend our deepest gratitude to our project supervisor, **Dr. S. Subramanian**, Assistant Professor, for his invaluable guidance and unwavering encouragement throughout this project. His expertise and support have been paramount to our success, and we are truly grateful for his contributions.

We would like to thank our **H.O.D. Dr. John Prince Soundranayagam, Associate Professor** for his valuable advices whenever we approached him. We also express our sincere thanks to **Dr. K. Amudhavalli, Dr. M. Nagarajan, Prof. A. Infantia Daphne and Prof. S. Subha**, Department of Physics for their encouragement & suggestions throughout the course of study.

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we are greatly indebted to **our parents & family members, friends** for their moral support which helped us to complete this work.

Introduction

This report deals into the fascinating realm of business expenses and provides a visual exploration of the various expenditures incurred by different businesses. It showcases the distribution of expenses, identifies key cost drivers, and highlights areas of potential optimization or concern. The visual representations allow for intuitive analysis, facilitating a deeper understanding of expenditure patterns and their implications for business performance. Decision-makers, financial analysts, and stakeholders can gain valuable insights into the financial health of businesses, identify areas of inefficiency or opportunity, and make informed decisions to optimize resources and drive growth.

To extract the Insights from the data and put the data in the form of visualizations, Dashboards and Story, we are going to employ the software Tableau tool to plot the following chart.

- Annual Pay Roll
- Advertisement Cost
- Contract Labour vs Employee
- Employee (Insurance vs pension)
- Equipment Costs
- Expenses YoY
- Fuel
- Maintenance of Buildings
- Power Expenditure
- Rental Payment Machinery
- Taxes & Licenses
- Transportation

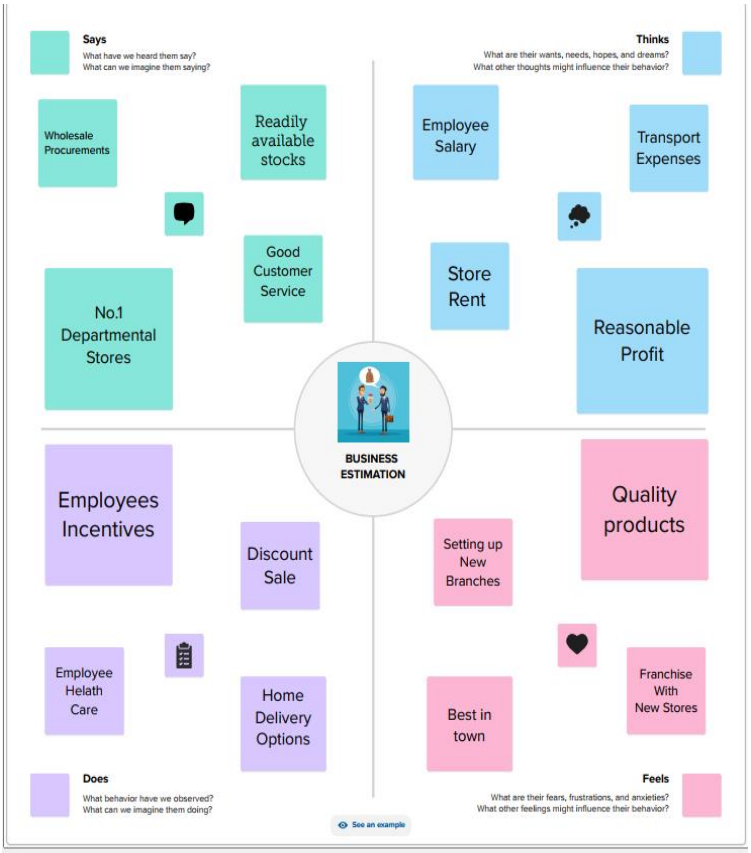
Project Flow

To accomplish this, we have to complete all the activities listed below,

- Empathy mapping
- Brain storming and Idea visualization
- Data Collection & Extraction
  - Collect the dataset
  - Connect Dataset with Tableau
- Data Preparation
  - Prepare the Data for Visualization
- Data Visualizations
  - No of Unique Visualizations
- Dashboard

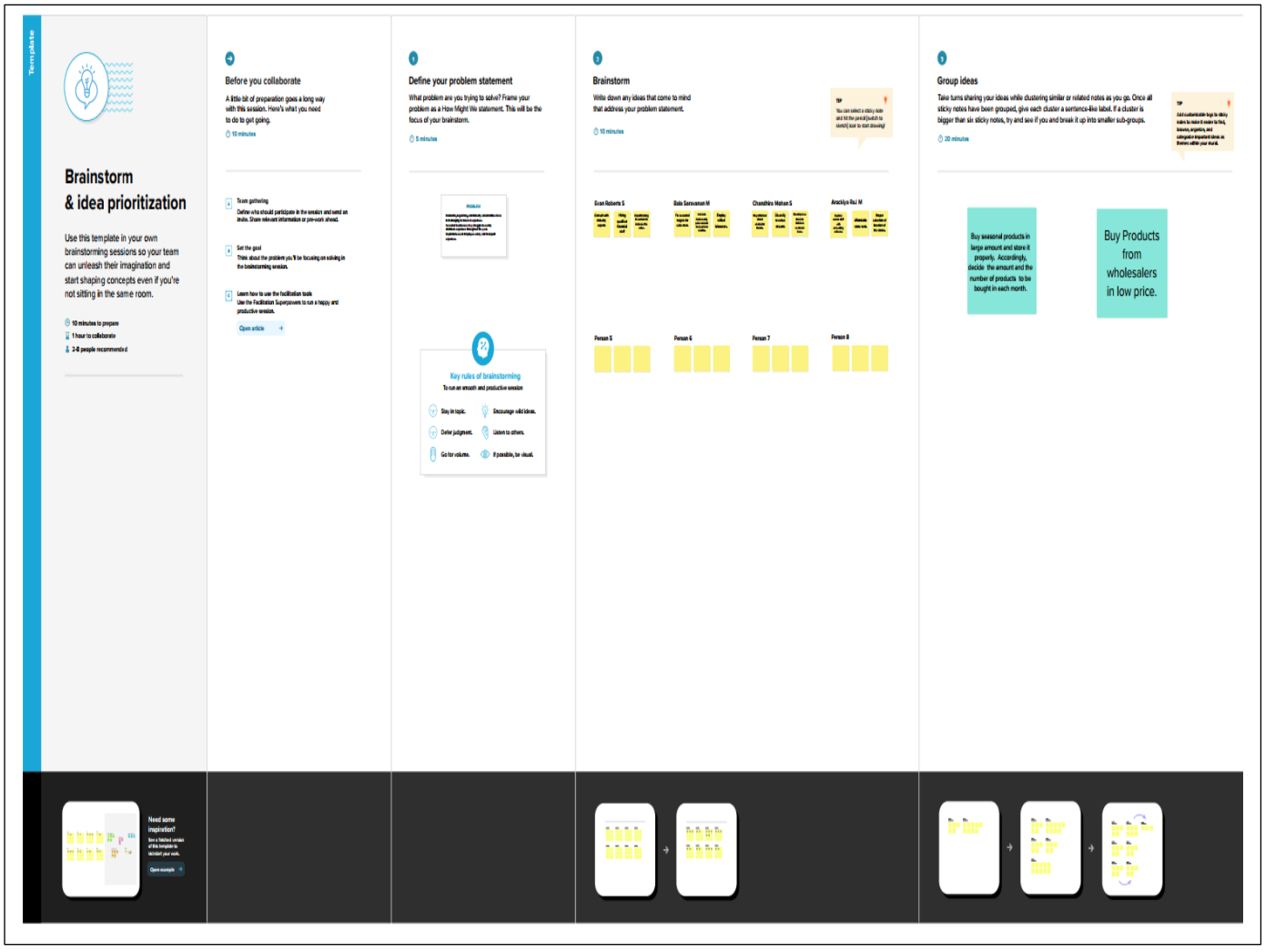
- Responsive and Design of Dashboard
- Story
- No of Scenes of Story
- Performance Testing
- Utilization of Data Filters
- No of Visualizations/ Graphs
- Publishing
- Publishing Dashboard & Story to Tableau Public
- Project Demonstration & Documentation
- Record explanation Video for project end to end solution
- Project Documentation-Step by step project development procedure.

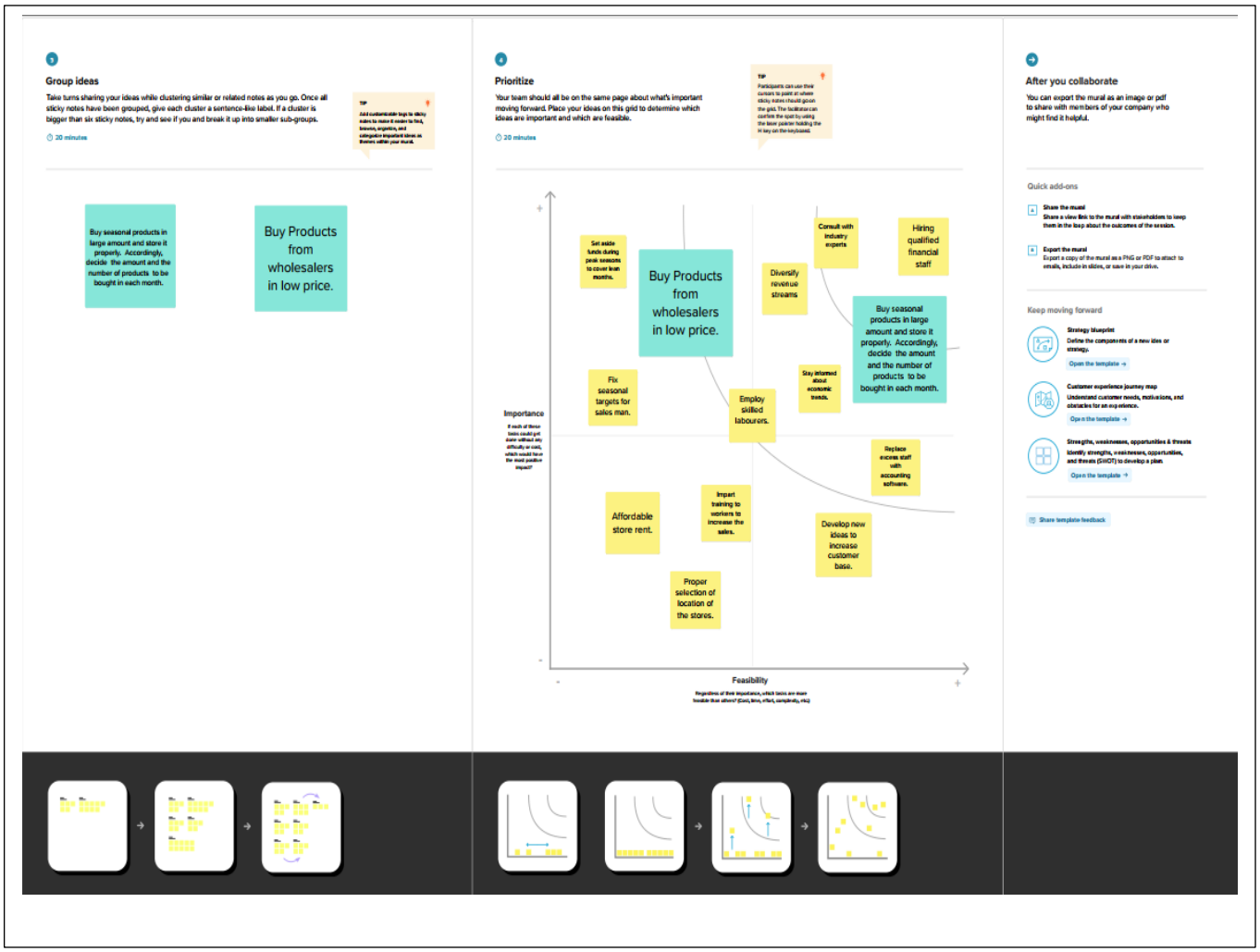
EMPATHY MAPPING



In **Empathy mapping**, we gathered ideas about market trends, consumer behavior, and factors like target audience and competition. By analyzing these aspects, I can create effective strategies, conduct thorough research, and collaborate with teams to make accurate estimations. It's an exciting yet responsible task, as the success of a project relies on these estimations.

BRAINSTORMING AND IDEA PRIORITIZATION





Brainstorming and visualizing ideas for business estimation, I usually start by gathering all the relevant data and information. Then, I use tools like mind maps, charts, and graphs to organize and visualize the data. This helps me identify patterns, trends, and potential opportunities for accurate estimations. It's a creative and analytical process that allows me to explore different possibilities and make informed decisions.

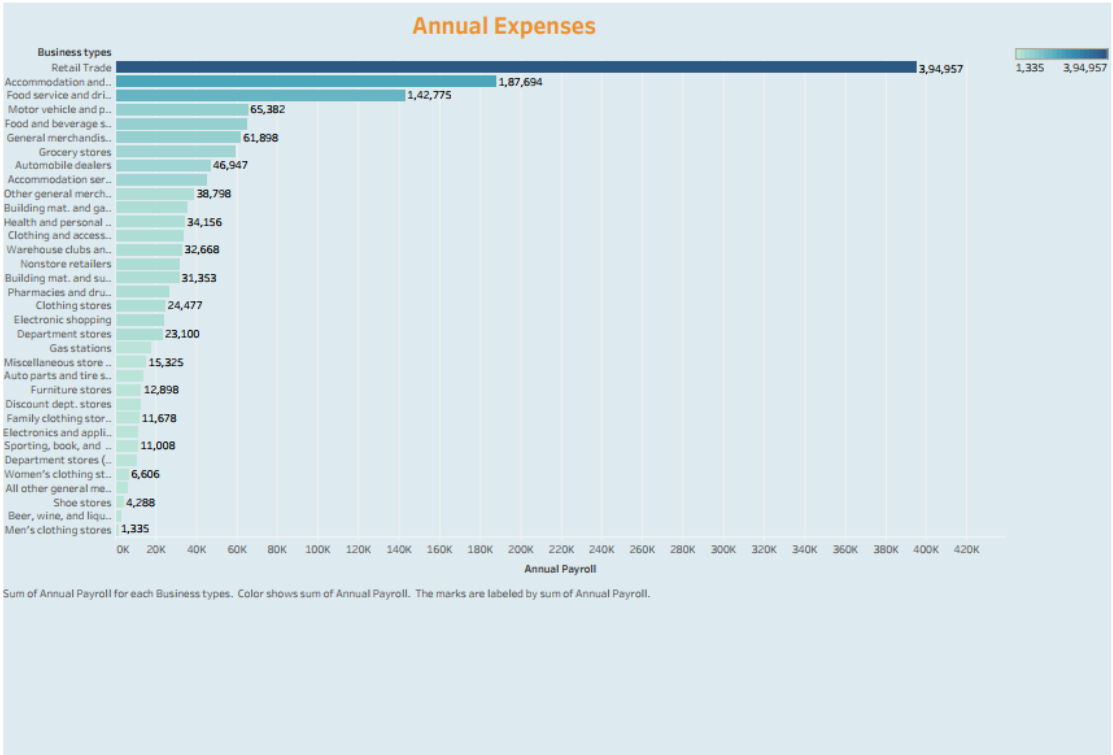
No of Unique Visualizations

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 a project 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, and show distribution, and relationships between variables. We are going to look into the following.

- Annual Pay Roll
- Advertisement Cost
- Contract Labour vs Employee
- Employee (Insurance vs pension)
- Equipment Costs
- Expenses YoY
- Fuel
- Maintenance of Buildings
- Power Expenditure
- Rental Payment Machinery
- Taxes & Licenses
- Transportation

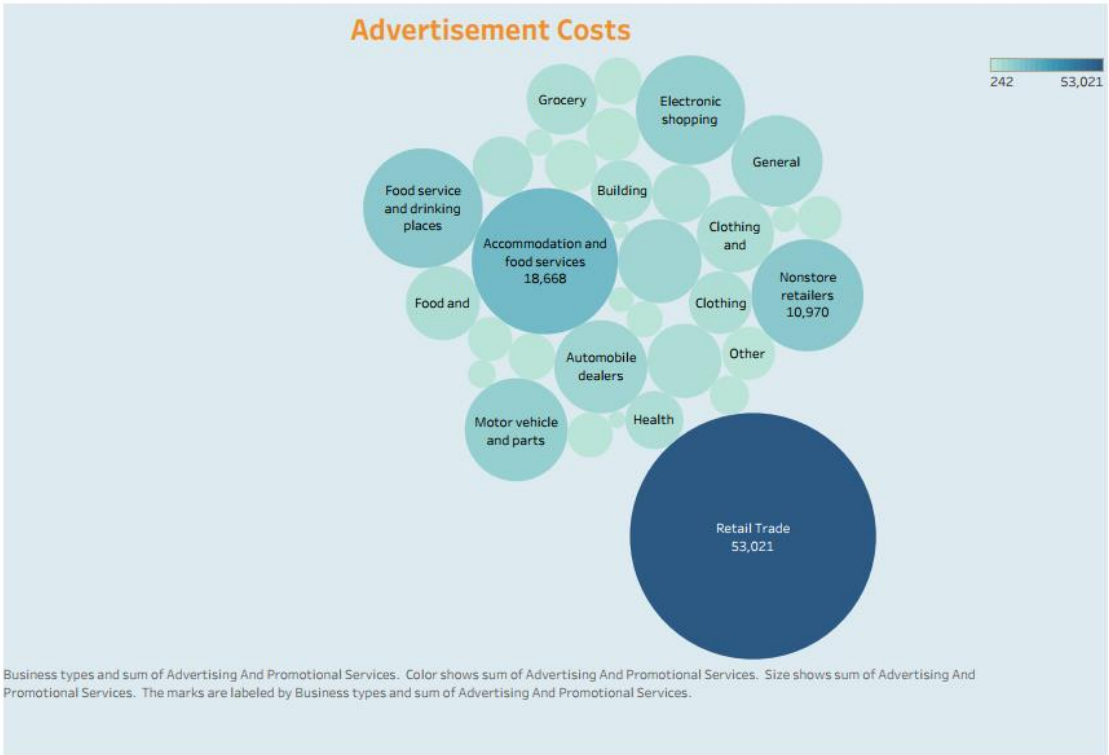
Annual payment:

Annual Pay Roll This bar chart illustrates the Annual payroll disbursed by businesses to their employees over the course reveals that the retail sector trade boasts the highest annual payroll, closely followed by the accommodation and food service sector.



Advertising cost:

This is a bubble chart shows the packed expenses incurred by various businesses to brands and reach out to customers.

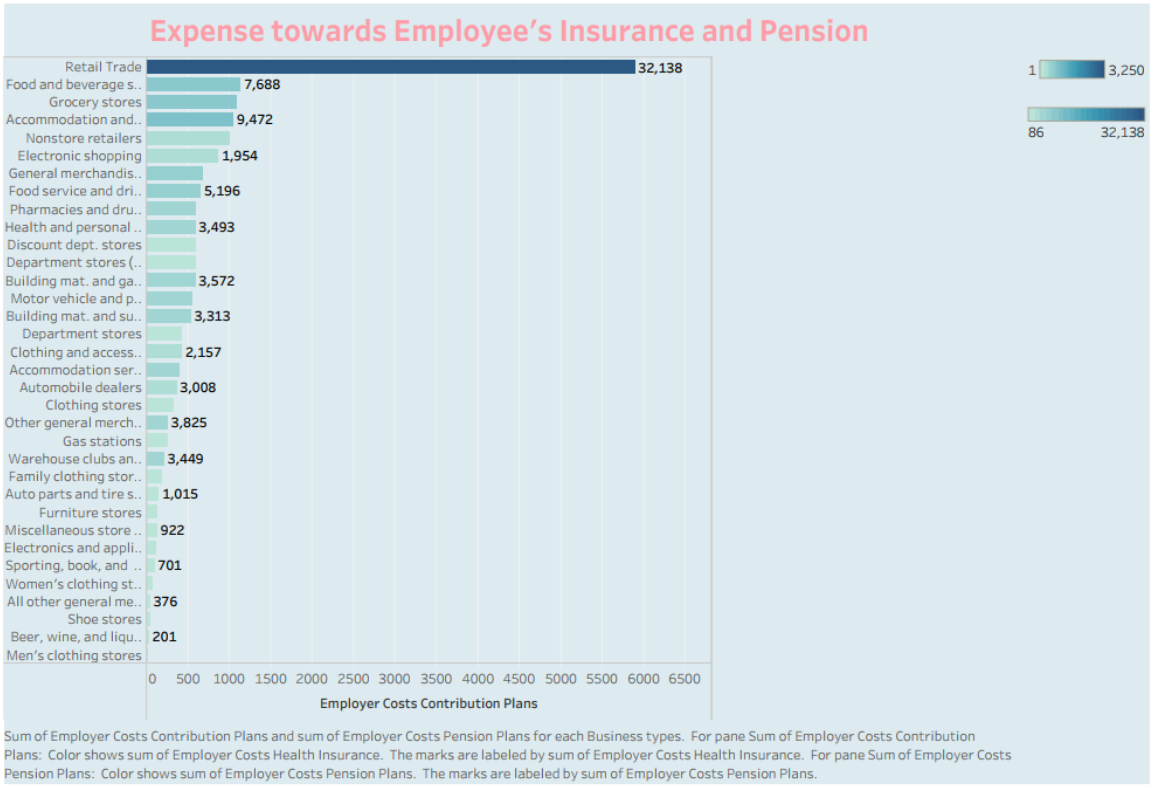


Contract Labour vs Employees:

This a bar Chart shows Comparison (Contract labour vs Employee) for both types of workers.

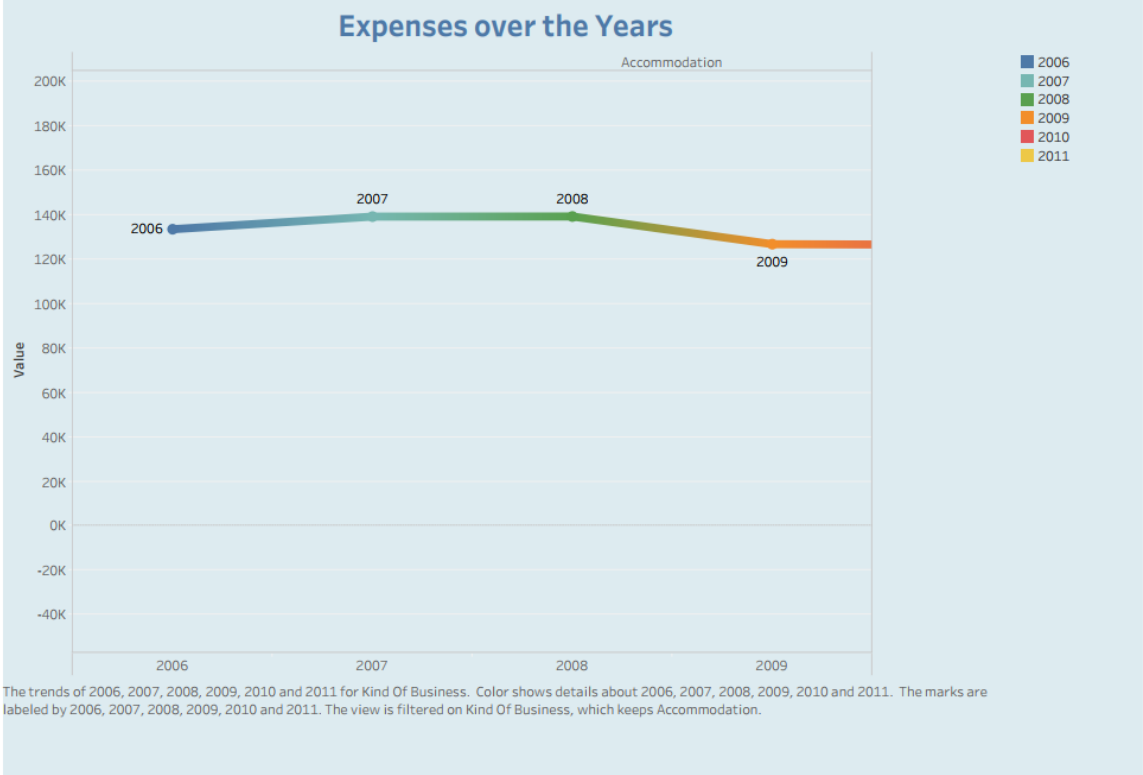
Employee (Insurance and pension):

This split bar chart provides a comparison of the Health insurance and pension plans for their represented the amount allocated to each category.



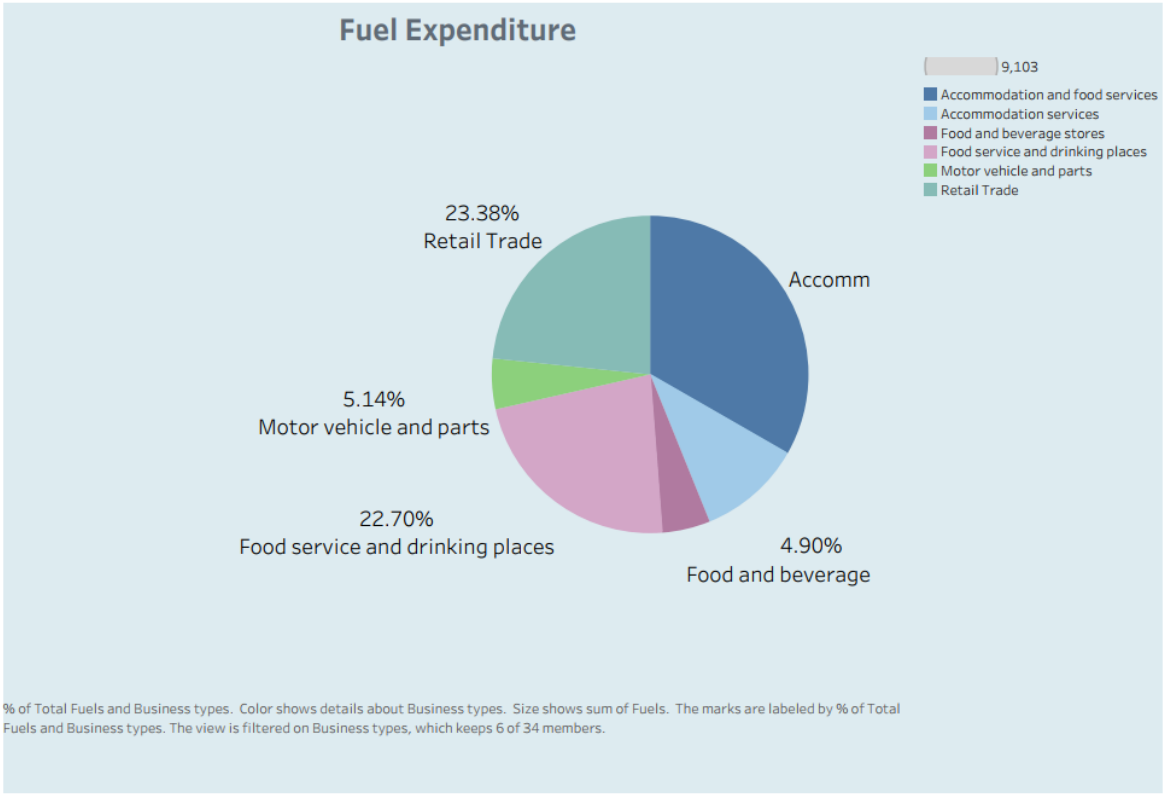
Expenses YoY:

This line chart presents the expenditure trends of specifically from 2006 to 2011, amount of money spent by each Businesses.



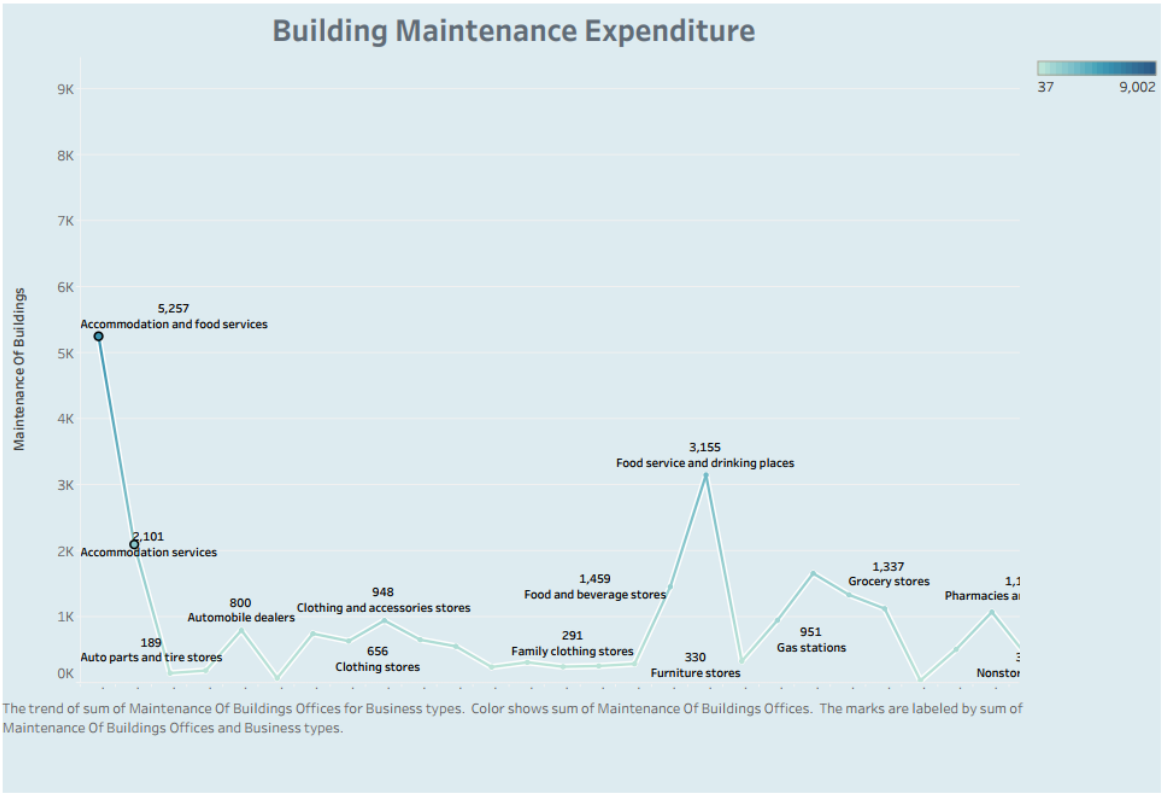
Fuel:

This pie chart illustrates the expenditure by showcasing the relative percentage of the costs.



Maintenance of Buildings:

This line chart illustrates the expenses incurred by each business for the maintenance of their buildings and offices. It provides a visual representation of the amount spent in the specific category.

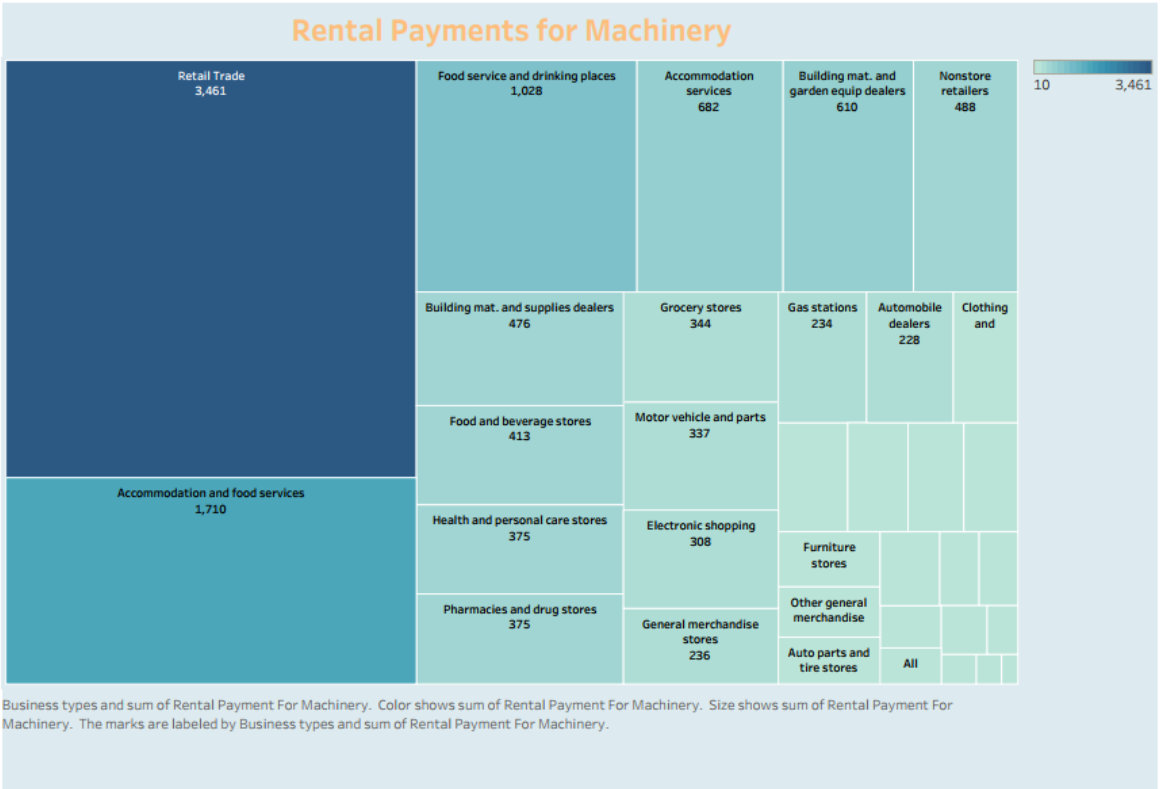


Power Expenditure:

This a flow chart which shows the electricity bills for different business types. We can estimate the power consumption in starting a business.

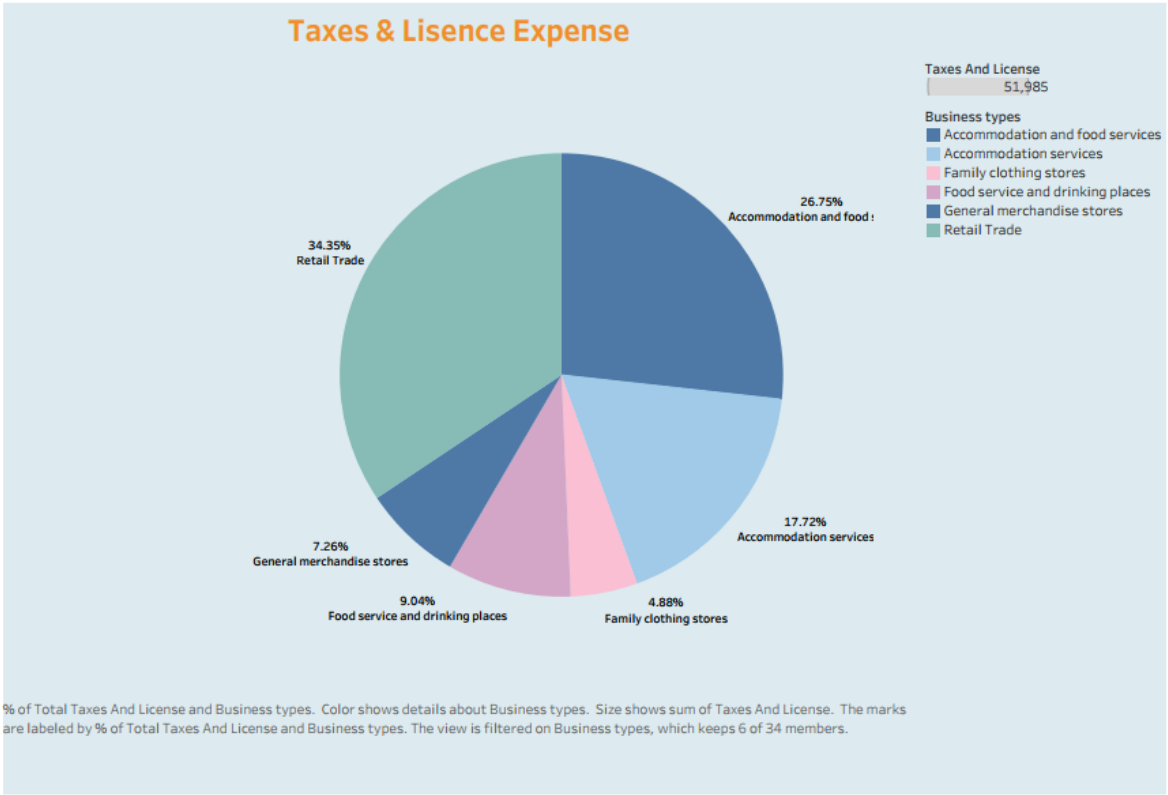
Rental Payment Machinery:

This tree map illustrates the expenditure on machinery by businesses, show chasing the distribution of cost associated with the renting equipment.



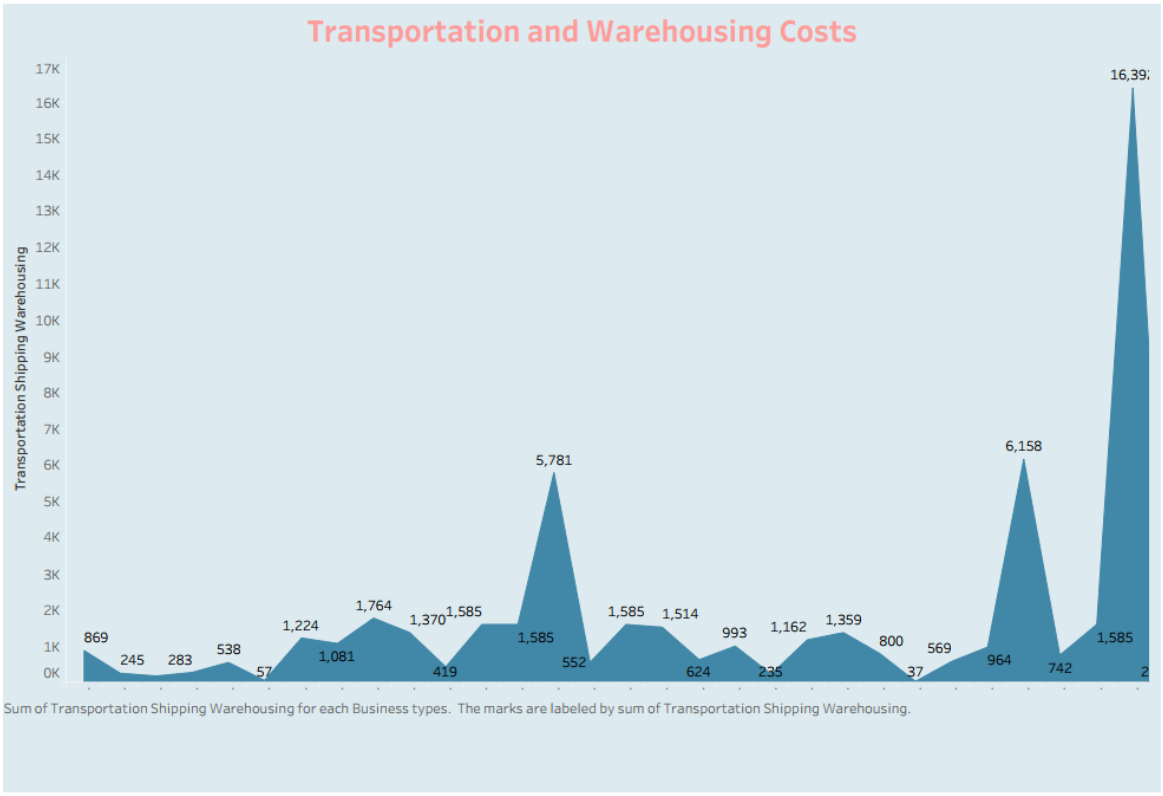
Taxes and licenses:

Taxes and licences: This pie chart illustrates the proportion of expenditure towards the taxes and licenses, percentages of these costs.



Transportation:

Transportation: This destiny map Transportation and warehousing intensity of cost in areas.



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.

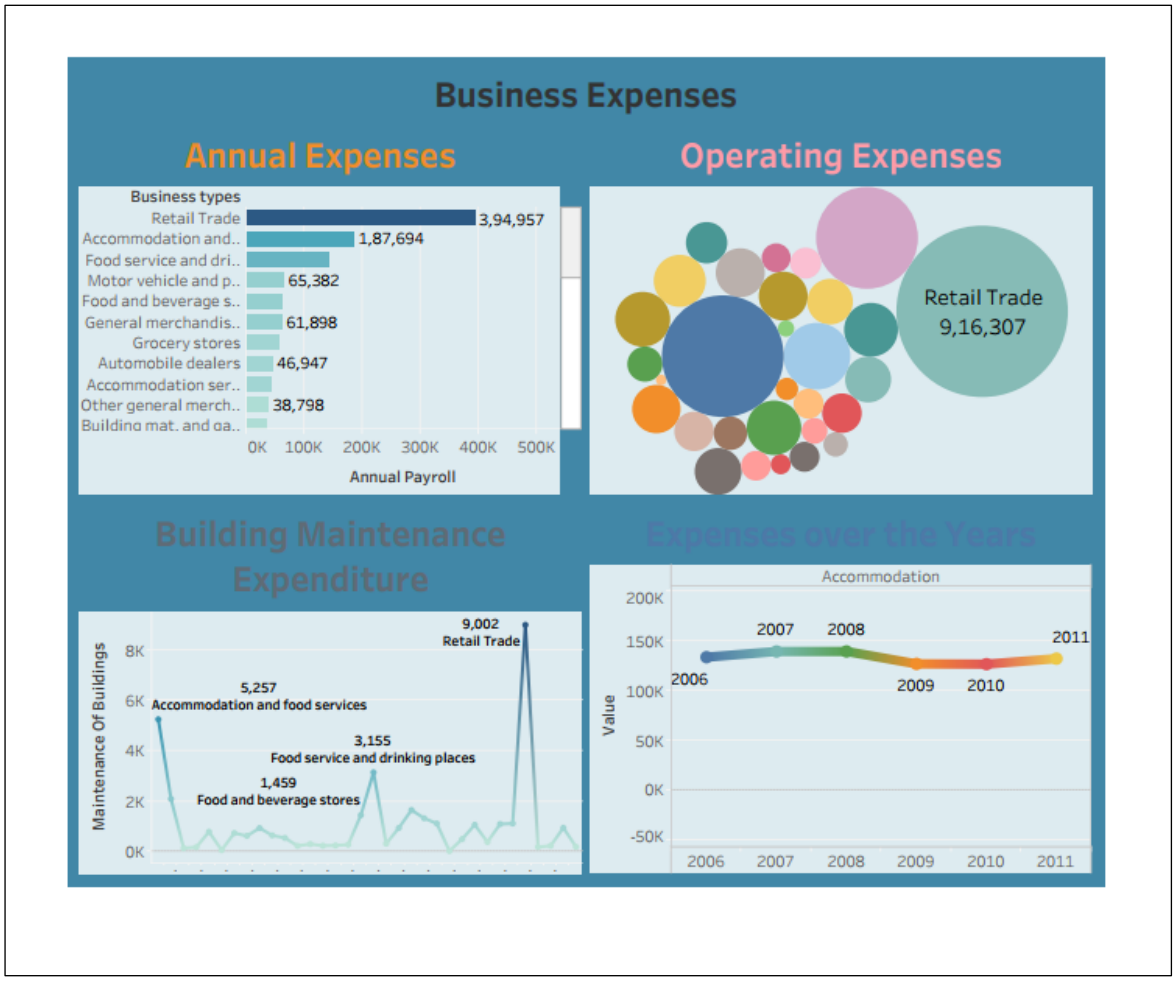
Responsive and design of dashboard

The responsiveness and design of a dashboard for Data-Driven insights on YouTube channels Analysis is crucial to ensure that the information is easily understandable and actionable. Key considerations for designing a responsive and effective dashboard include user-centred design, clear and concise information, interactivity, data-driven approach, accessibility, customization, and security. The goal is to create a dashboard that is user-friendly, interactive, and data-driven, providing actionable insights.

Dashboard 1

Dashboard 1 shows us the various expenses occur while starting a business.

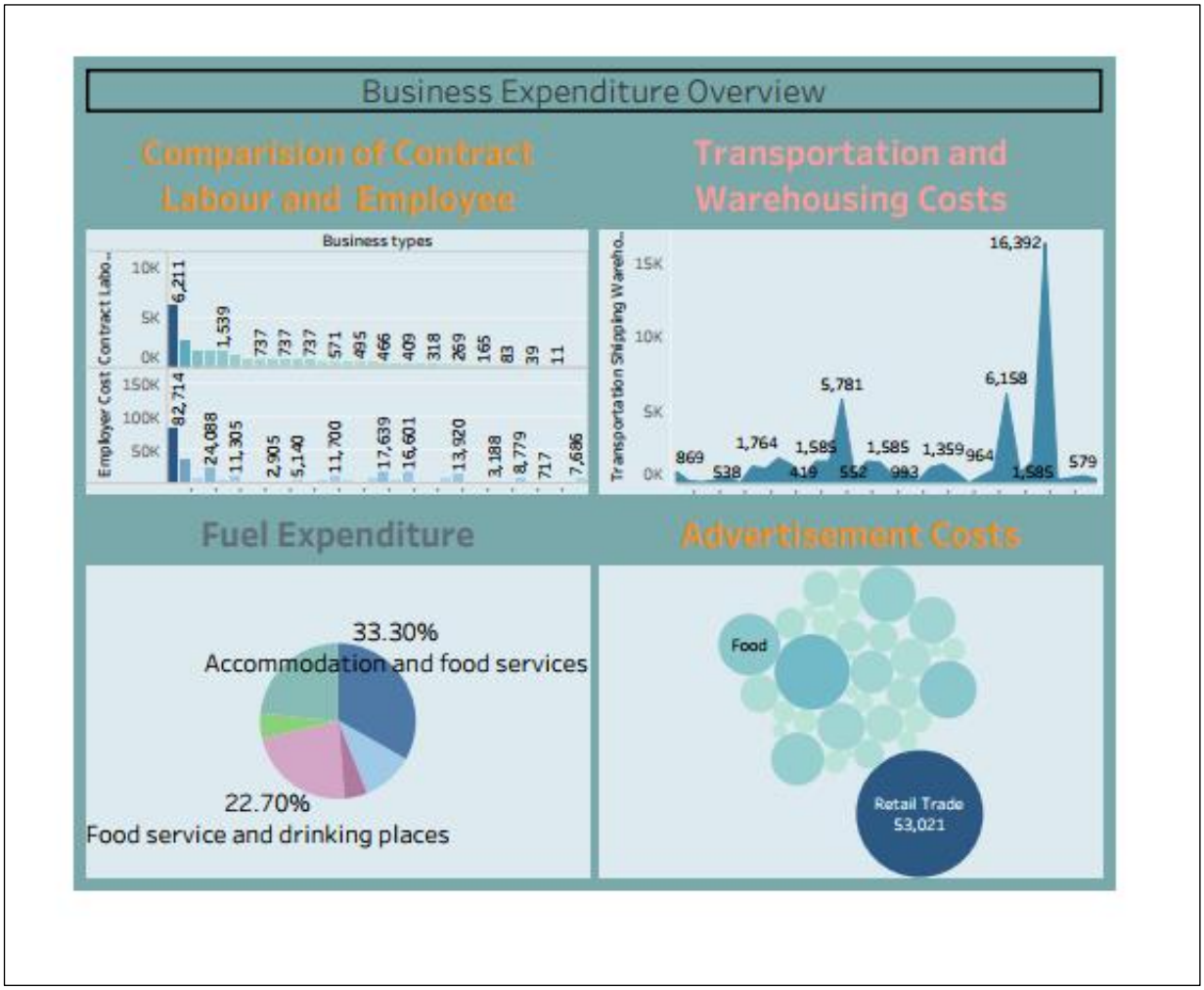
- Annual Expenses
- Operating Expenses
- Building Maintenance Expenditure
- Expenses over the Year



Dashboard 2

Dashboard 2 shows us the Business Expenditure Overview for

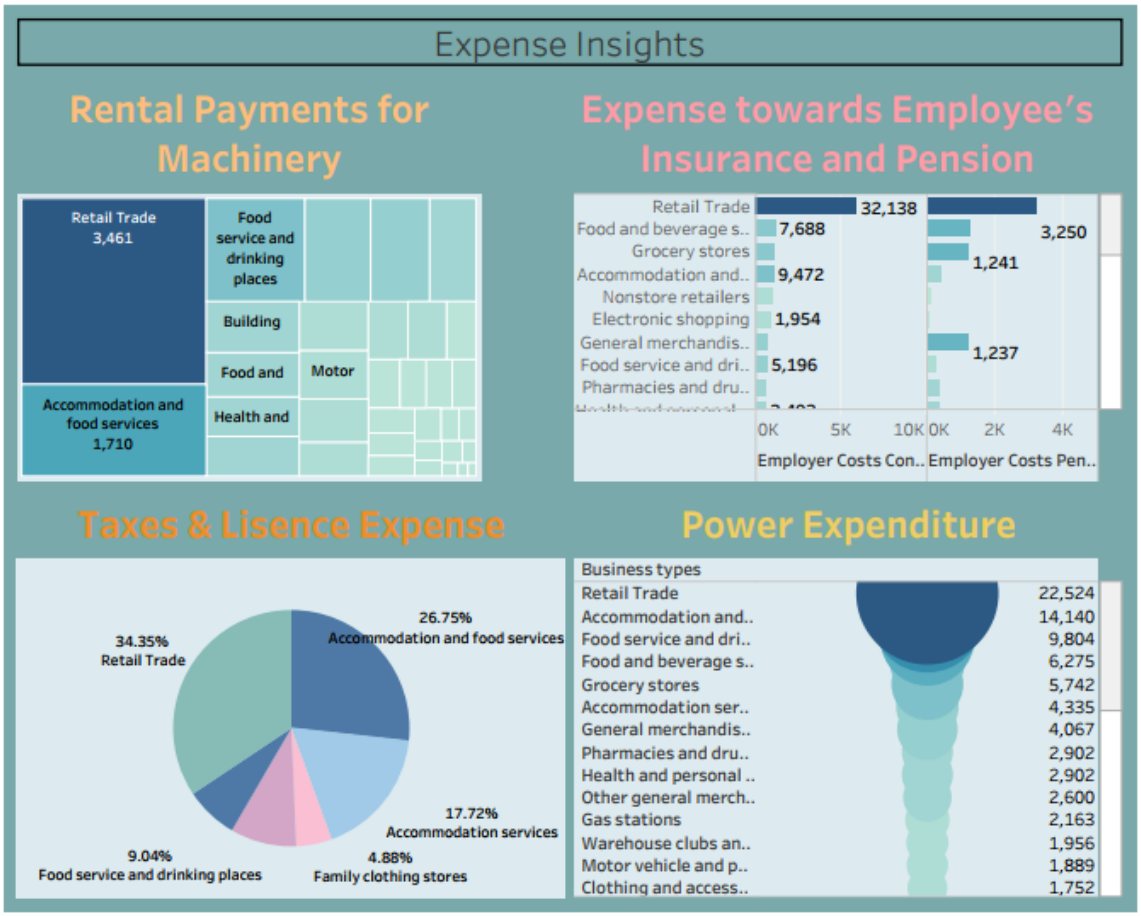
- Comparison of Contract labour and Employee
- Transportation and Warehousing cost
- Fuel Expenditure
- Advertisement Cost



Dashboard 3

Dashboard 3 shows us the Business expense insights for

- Rental Payment for Machinery
- Expenses towards Employee's insurance and Pension
- Taxes and License expenses
- Power expenditure



Story

A data story is a way of presenting data and analysis in a narrative format, with the goal of making the information more engaging and easier to understand. 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.

No. of scenes of story

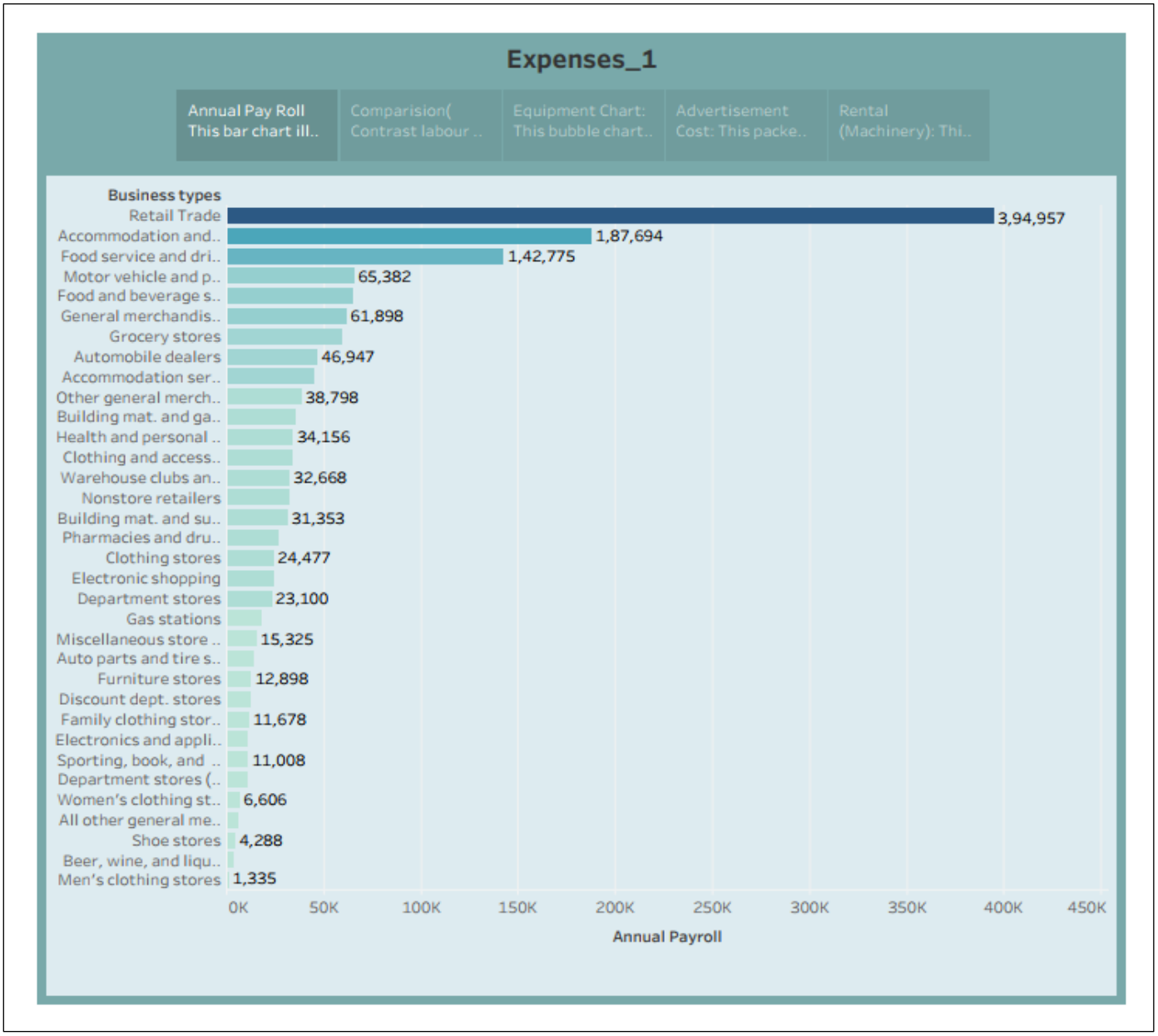
The number of scenes in a storyboard for Data-Driven insights on YouTube channels Analysis will depend on the complexity of the analysis and the specific insights that are trying to be conveyed. A storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.

- The link given below is for the story.
- https://drive.google.com/file/d/1alLin8xDPQgF4p0xYSWLIY04pwuzcSFm/view?usp=drivesdk

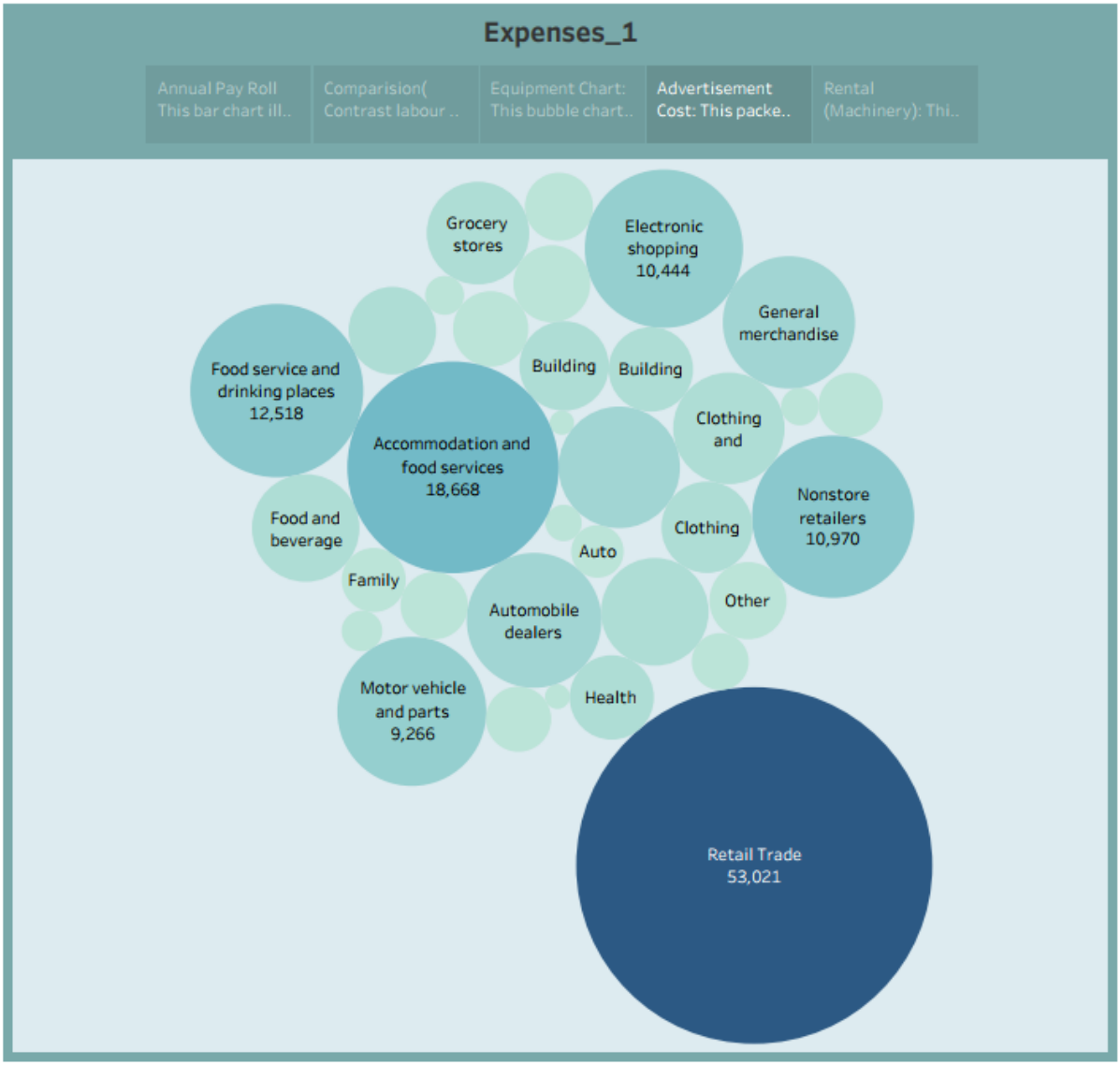
- https://drive.google.com/file/d/10MY4kYtTf92i83nQCuNuleR-YgRIfzbz/view?usp=drivesdk

Story 1: Expenses_1

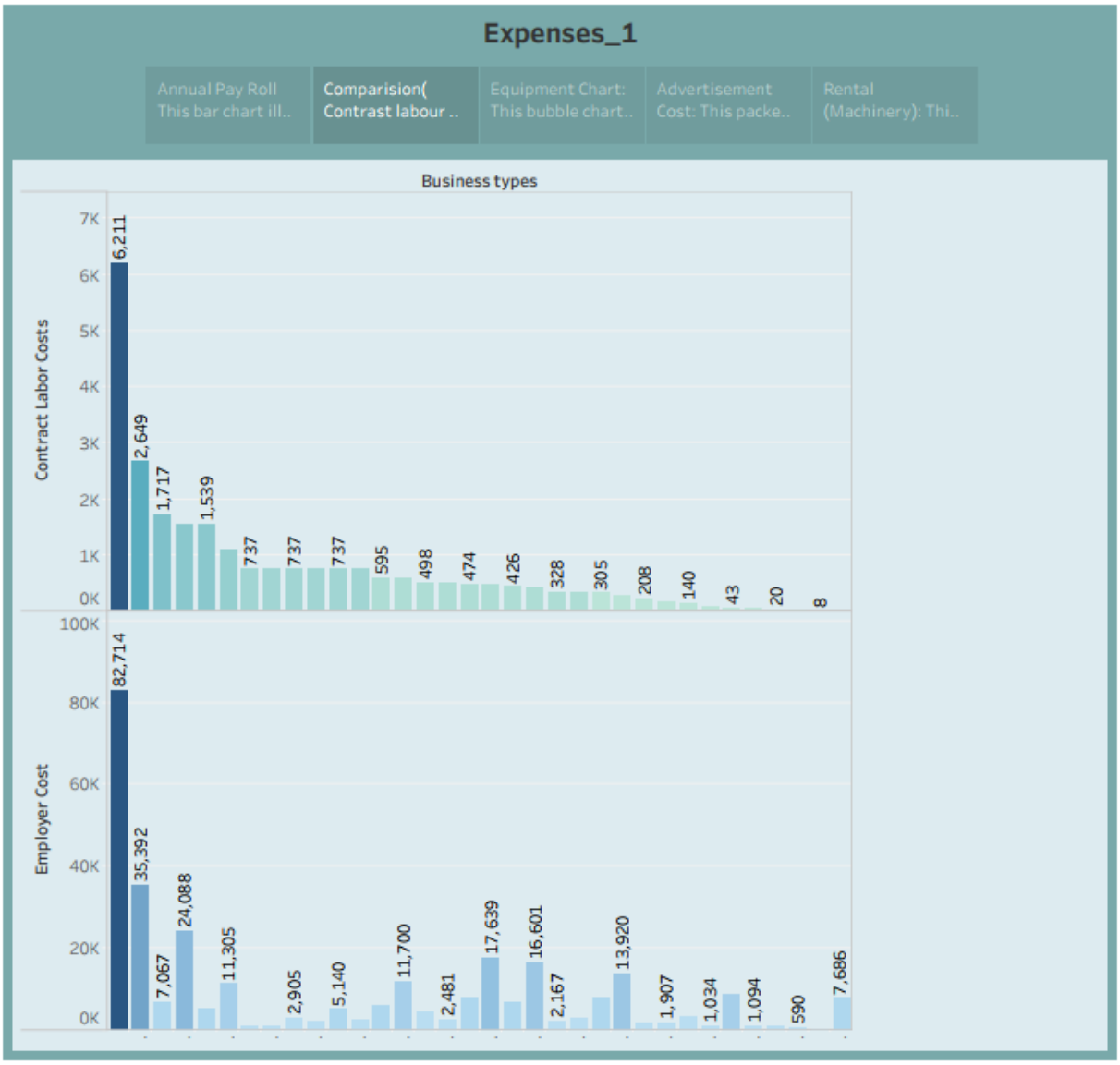
Annual payment



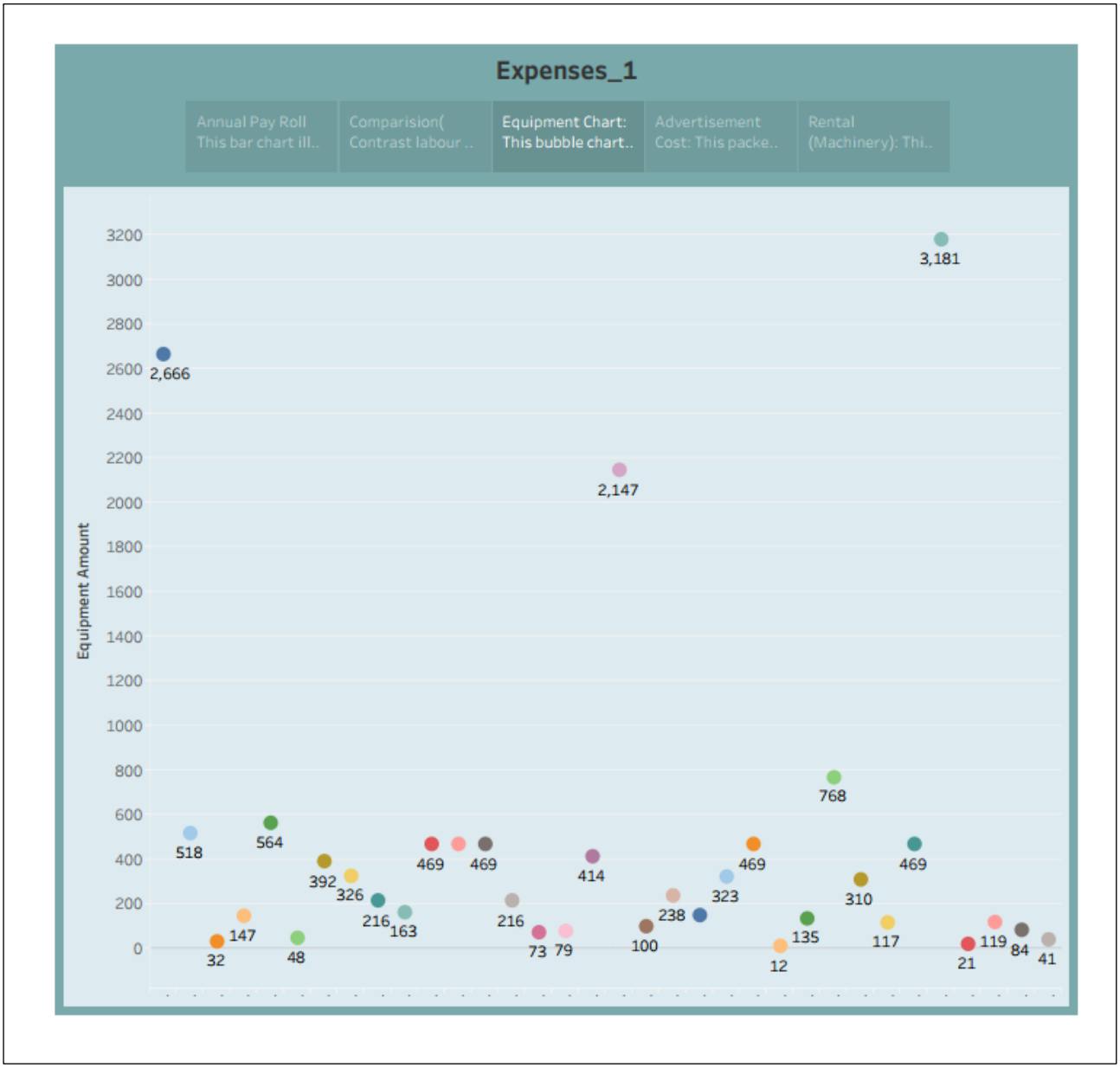
Advertising cost



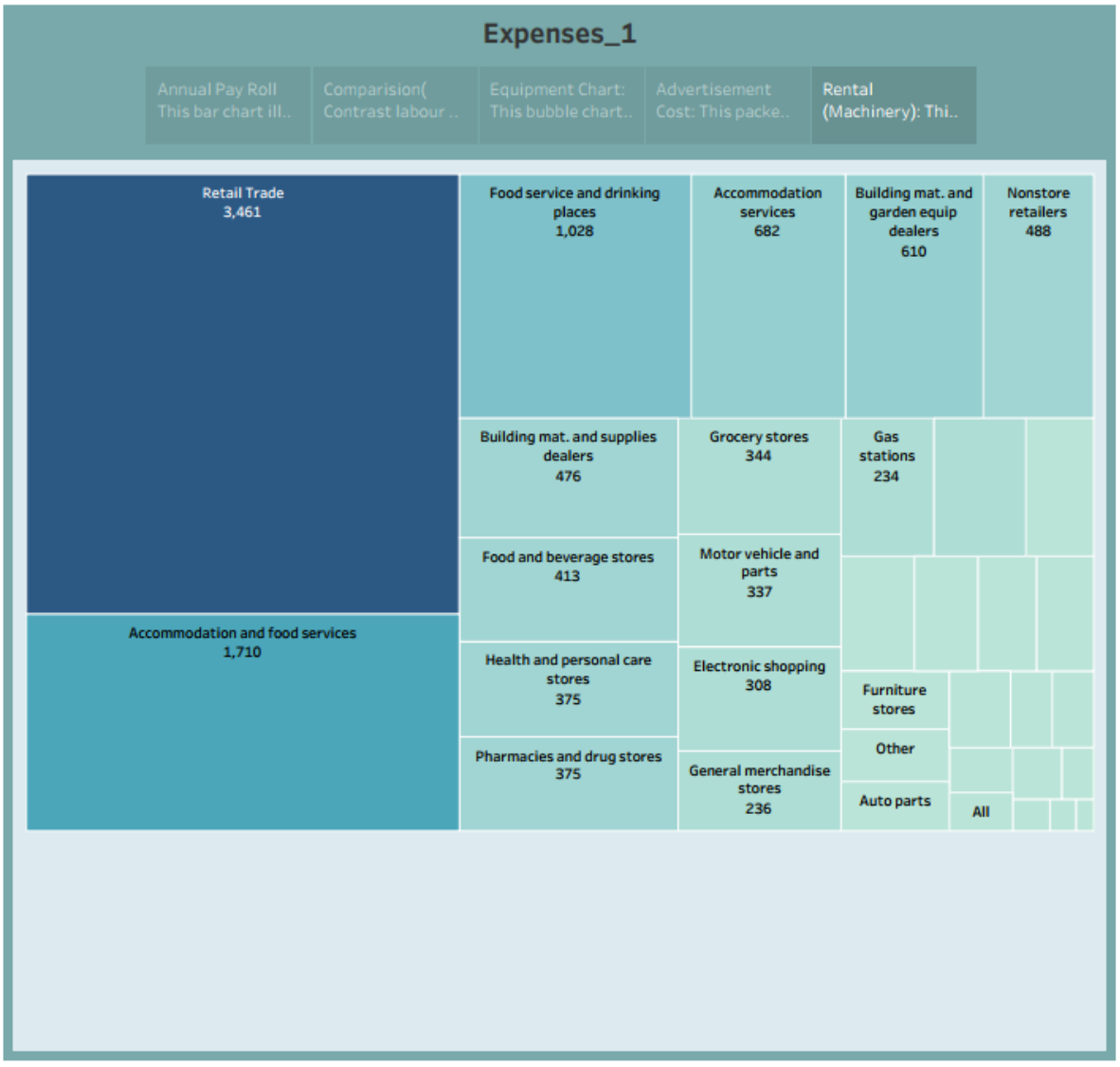
Contract Labour vs Employees



Equipment Chart

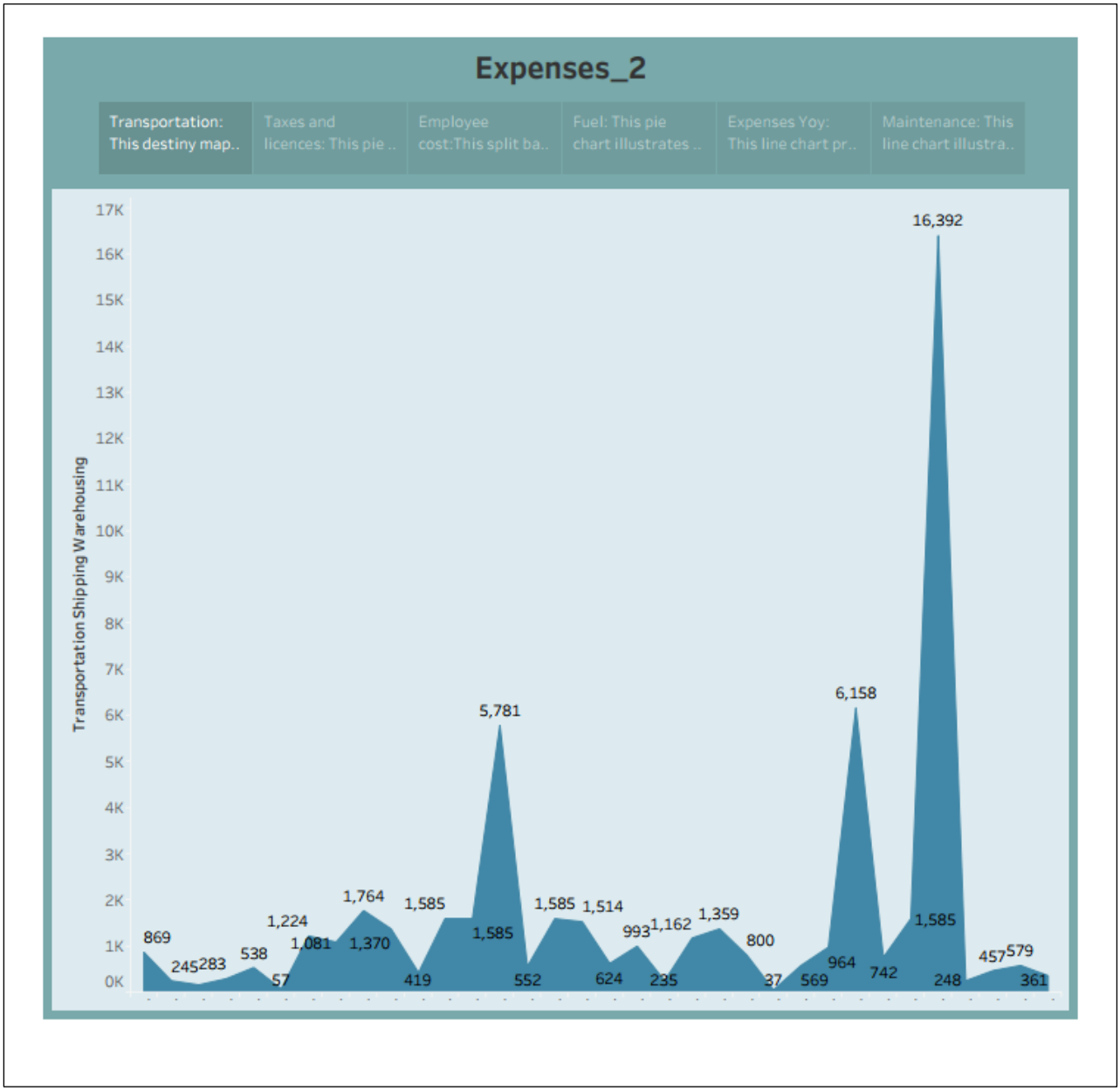


Rental Payment Machinery

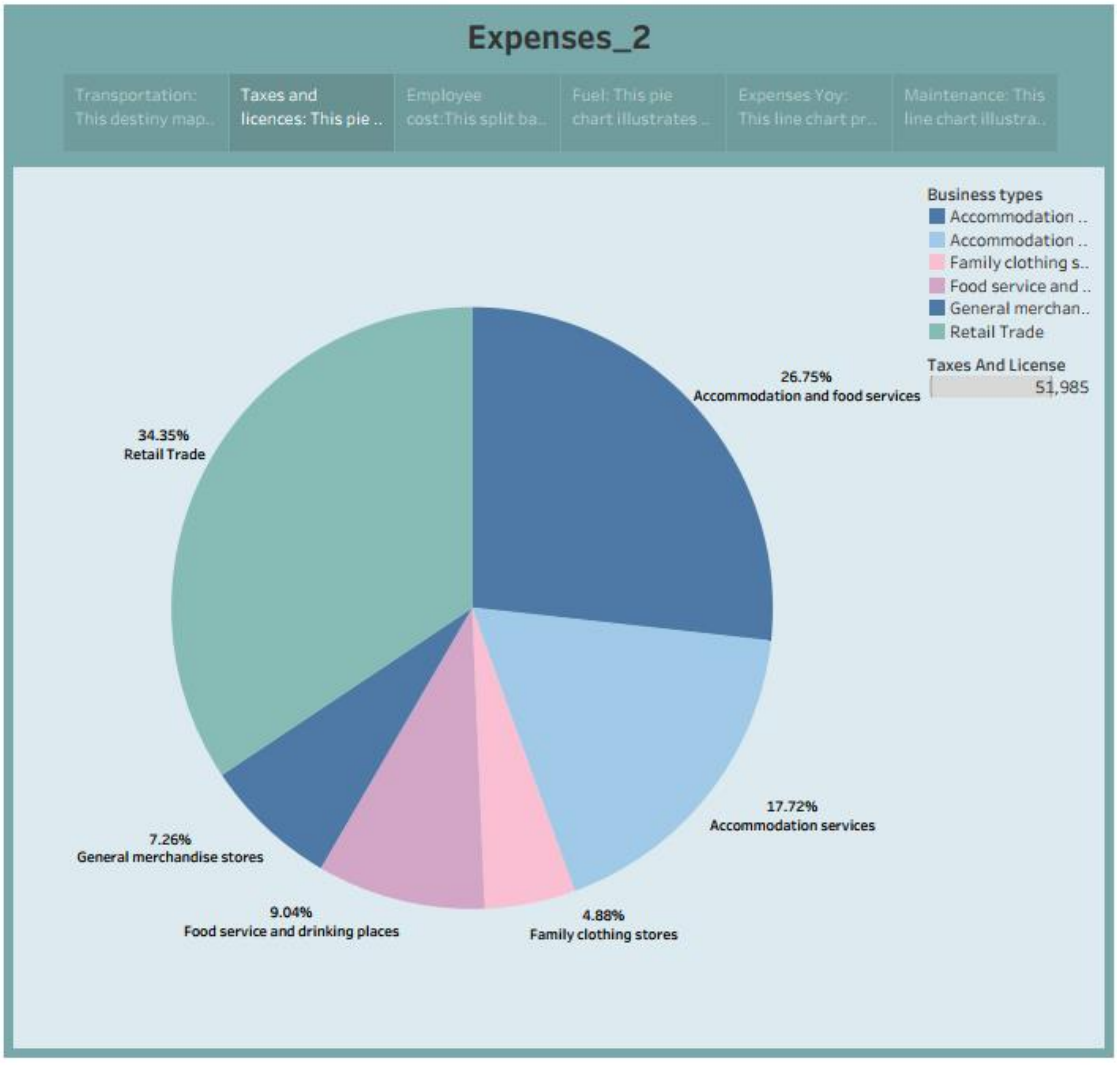


- Story 2: Expenses_2

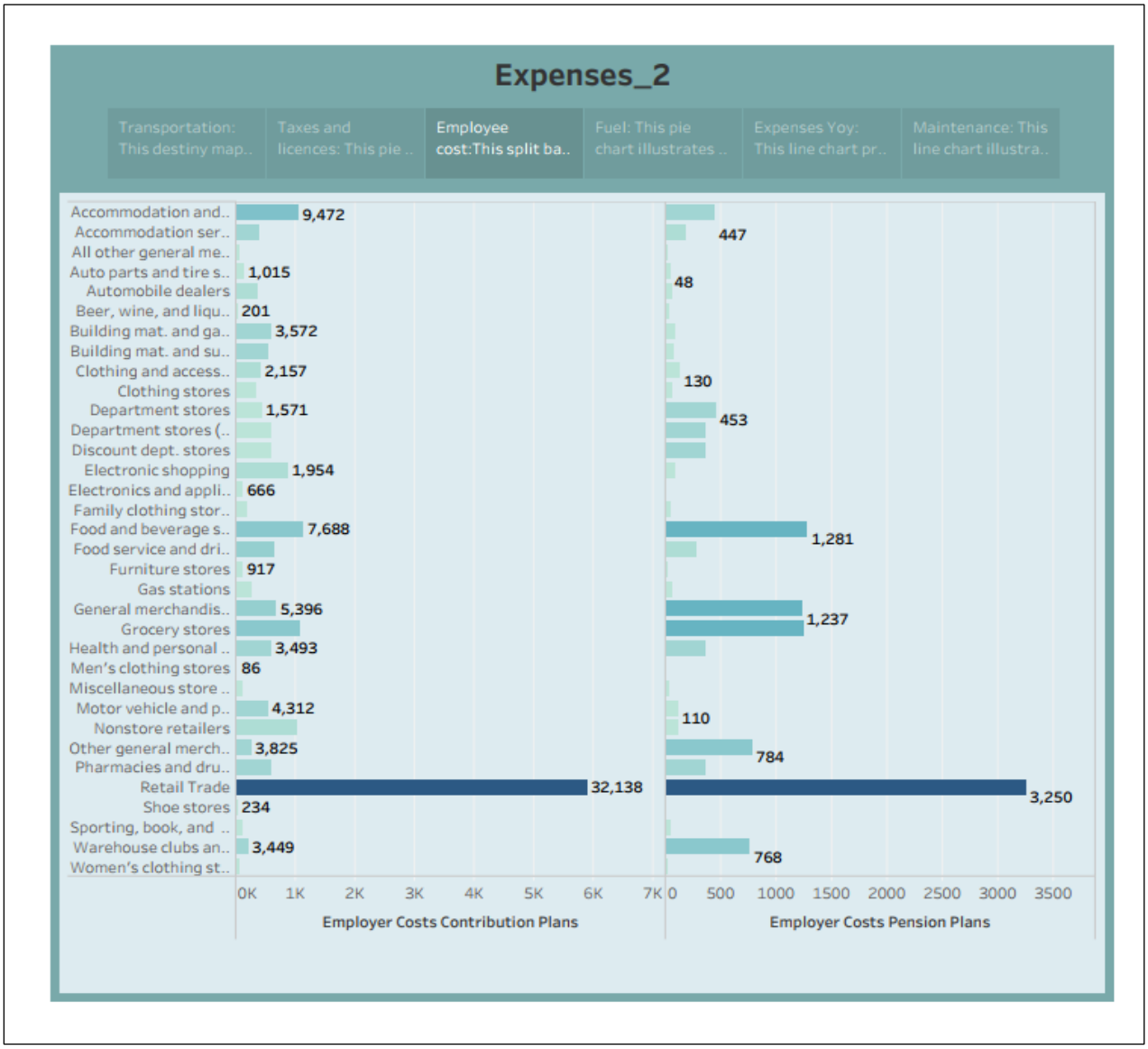
Transportation



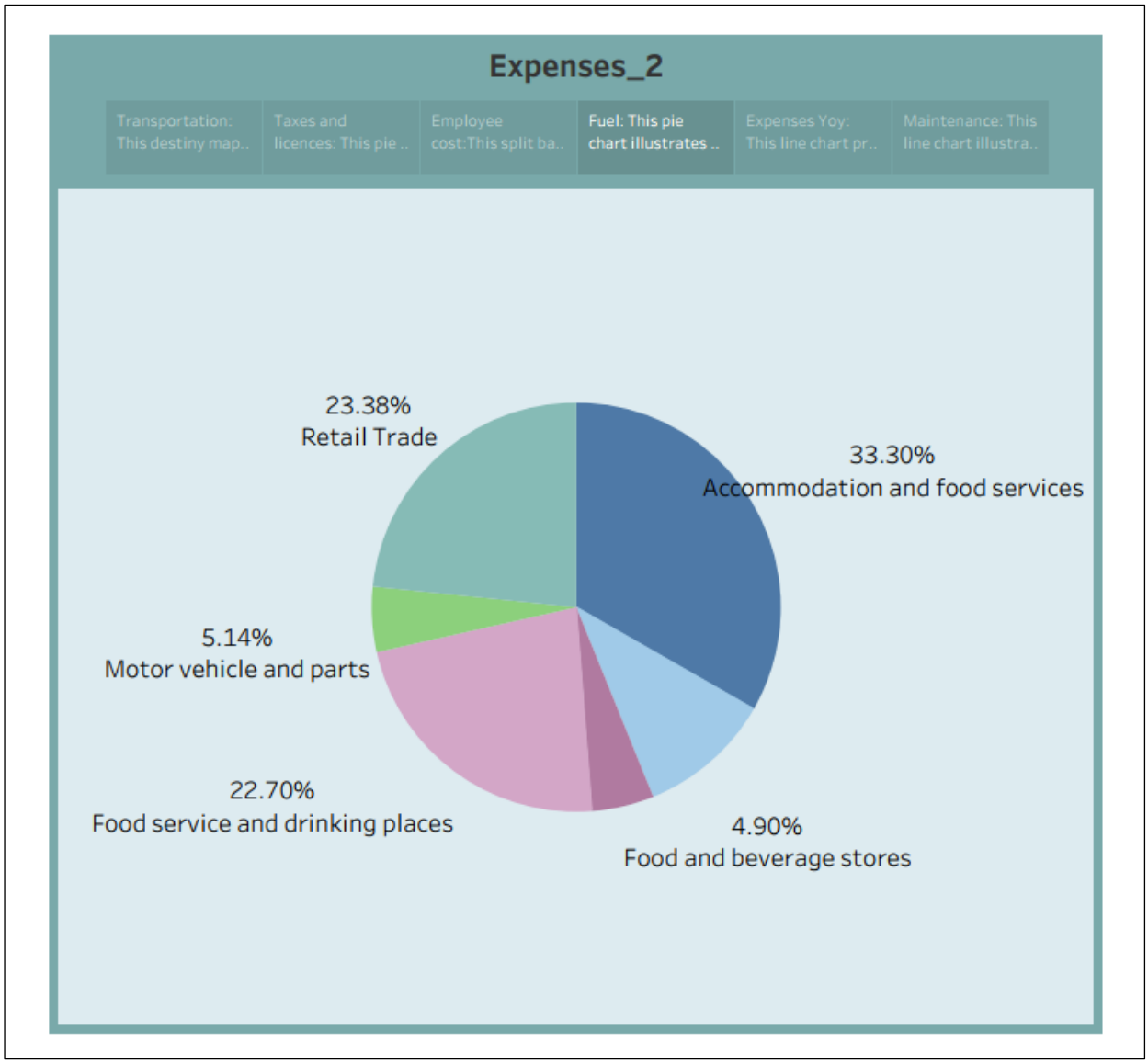
Taxes and licenses



Employee Cost

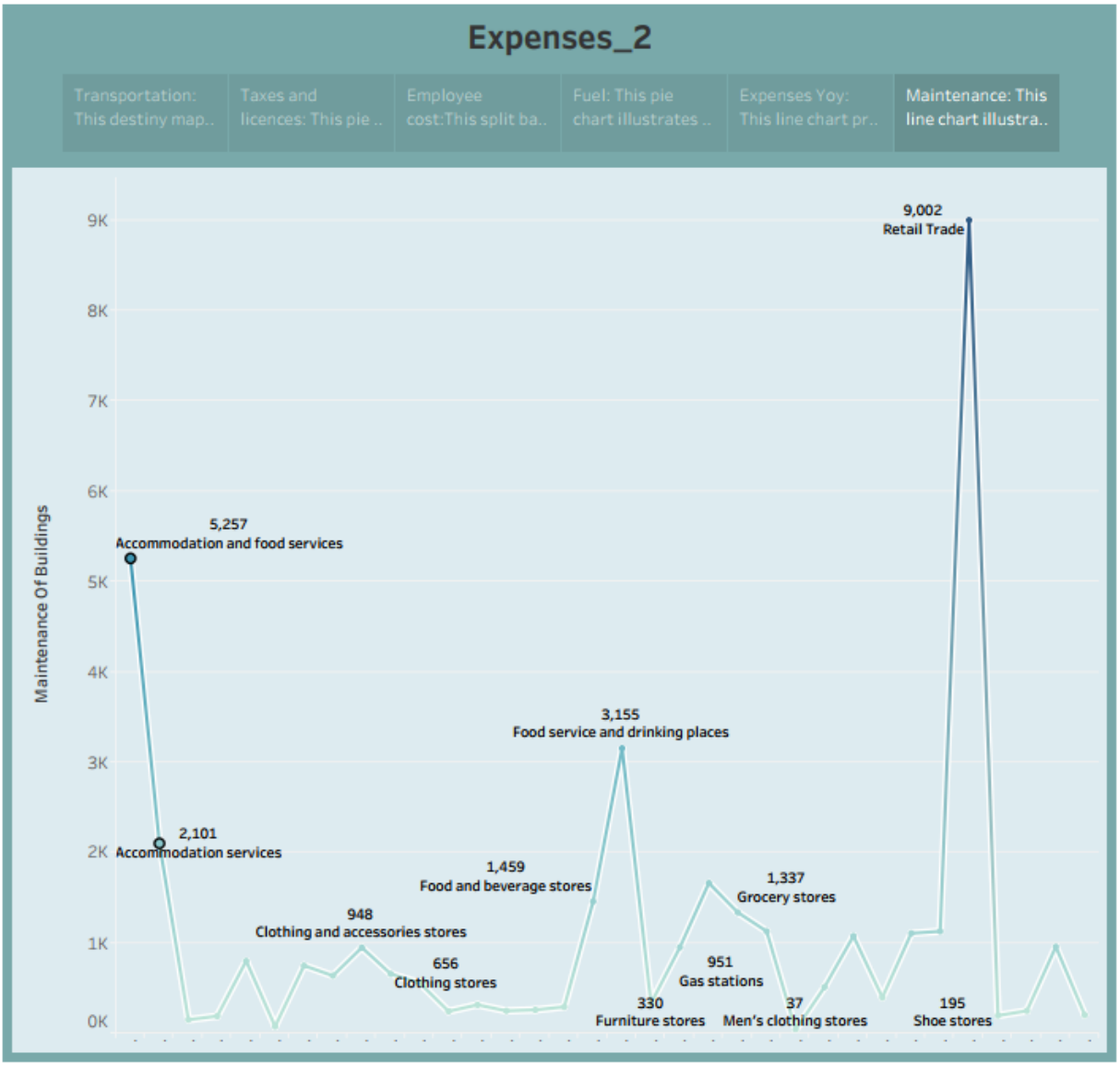


Fuel


Expenses_2
Transportation: This destiny map..
Taxes and licences: This pie ..
Employee cost:This split ba..
Fuel: This pie chart illustrates ..
Expenses Yoy: This line chart pr..
Maintenance: This line chart illustra..
23.38%
Retail Trade
33.30%
Accommodation and food services
5.14%
Motor vehicle and parts
22.70%
Food service and drinking places
4.90%
Food and beverage stores

Expenses YoY

Maintenance of Buildings



Publishing

Publishing Tableau Desktop to Tableau Public is a process that allows to share your Tableau visualizations publicly on the internet. Tableau Public is a free cloud-based platform provided by Tableau Software specifically designed for sharing interactive data visualizations with the world. When you publish to Tableau Public, your visualizations become accessible to anyone on the web, and you can embed them in websites, blogs, and social media.

Publish Dashboard & Story to Tableau Public

We have published the results of our analysis in Tableau Public and given the link below.

https://public.tableau.com/app/profile/evan.roberts.s/vizzes

Project Demonstration & Documentation

Video explanation of our work have been recorded and the link for access is given here.

https://drive.google.com/file/d/1aOYM6LMitIHCdWKzpT6uPDI7dMYd-muY/view

Results and Discussions

We have estimated various expenses for over a range of business by analysing the data by plotting graphs and visualised the same in dashboards and stories using the tool Tableau.

We have studied the data by creating charts for the following

- Annual Pay Roll
- Advertisement Cost
- Contract Labour vs Employee
- Employee (Insurance vs pension)
- Equipment Costs
- Expenses YoY
- Fuel

- Maintenance of Buildings
- Power Expenditure
- Rental Payment Machinery
- Taxes & Licenses
- Transportation

The knowledge gained by doing this project may be useful to increase the profit of our family run retail shop by cutting down the expenses. This can be achieved by visualizing product invoices, utility expenses, salary of employees, shop rent and taxes by using data analytics software tableau.


Thank
you!