



GOVERNMENT ARTS COLLEGE (AUTONOMOUS), COIMBATORE – 18.
DEPARTMENT OF PHYSICS

A PROJECT REPORT ON

ESTIMATION OF BUSINESS EXPENSES

BASED ON THE COURSE

FUNDAMENTALS OF DATA ANALYTICS WITH TABLEAU – SMARTBRIDGE

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DEPARTMENT OF PHYSICS

SUBMITTED TO

NAAN MUDHALVAN – SMART INTERNZ

DATA ANALYTICS UPSKILL PROGRAMING



Dissertation submitted in partial fulfilment of the requirements for the course of

FUNDAMENTALS OF DATA ANALYTICS WITH TABLEAU – SMARTBRIDGE

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1. INTRODUCTION

1.1 OVERVIEW

Estimating business expenses is a critical aspect of financial planning and management for any organization, whether it's a small startup or a large corporation. Accurate expense estimation is essential for budgeting, forecasting, and making informed financial decisions. It involves predicting and planning for various costs that a business is likely to incur in its day-to-day operations.

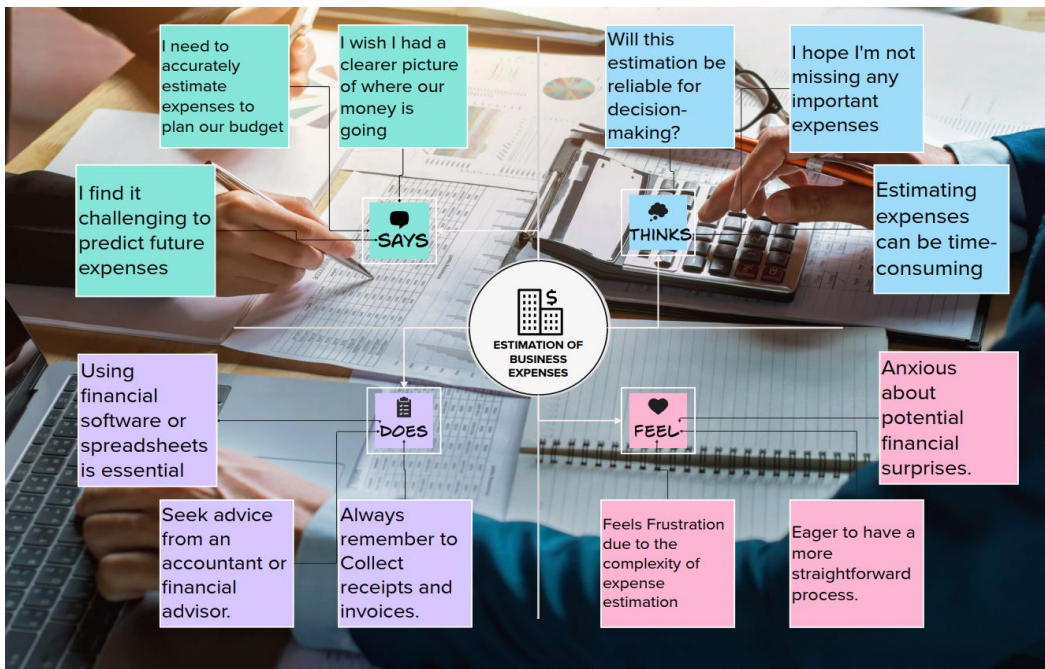
1.2 PURPOSE

The purpose of estimating business expenses is to facilitate sound financial planning, informed decision-making, and efficient resource allocation within an organization. It enables the creation of budgets, aids in evaluating financial performance, and instills confidence in investors and lenders. Additionally, accurate expense estimation supports risk management by identifying potential financial vulnerabilities, ultimately contributing to the long-term financial stability and growth of the business.

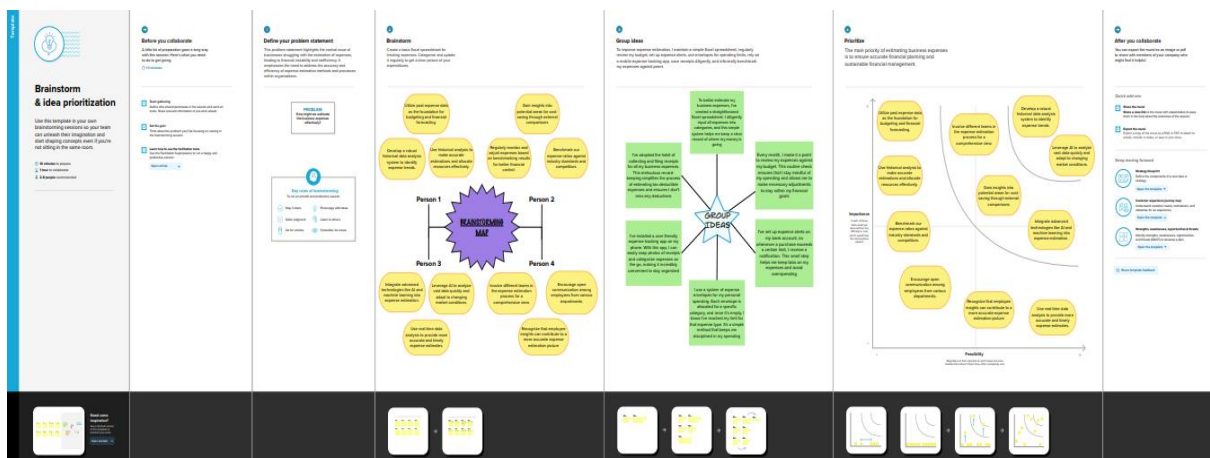
2. PROBLEM DEFINITION & DESIGN THINKING

In order to fulfil the milestone Empathy map and Brainstorming map was created by group discussions. Those maps are uploaded in GitHub and the links to access those files are hyperlinked here, [Empathy map](#), [brainstorm map](#).

2.1 EMPATHY MAP



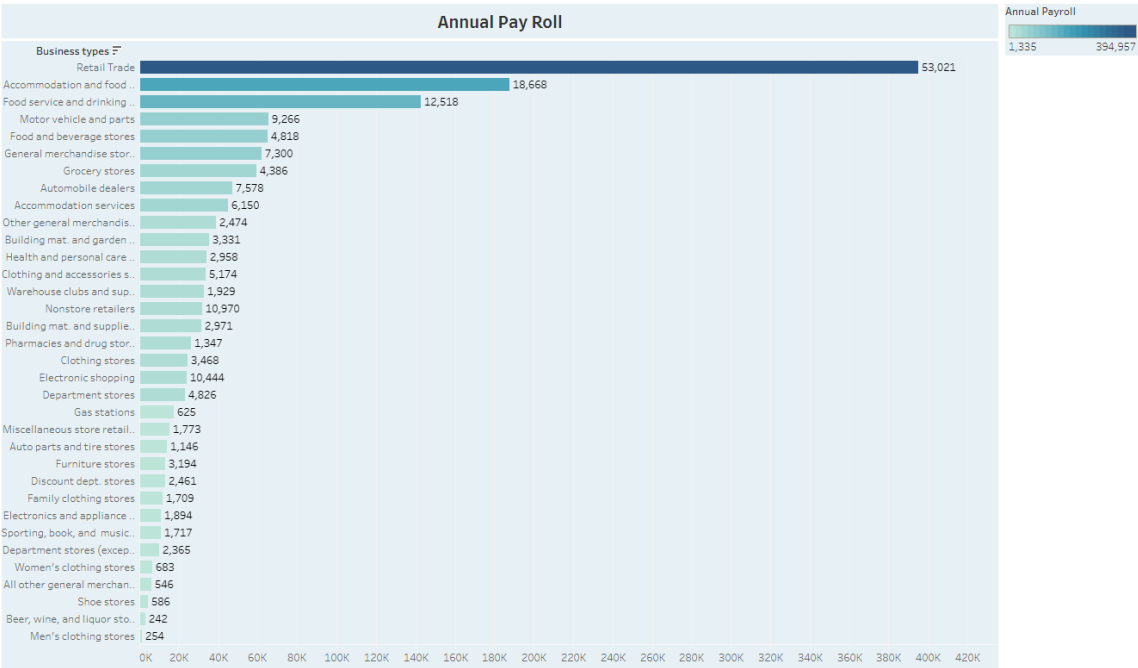
2.2 BRAINSTORMING MAP



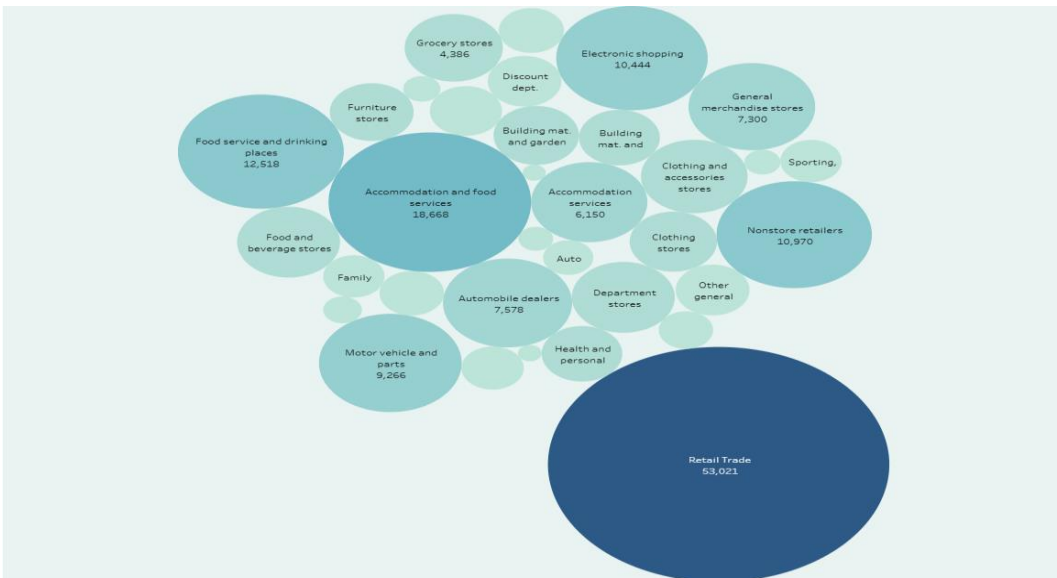
3. RESULT

VISUALISATION OF SHEETS

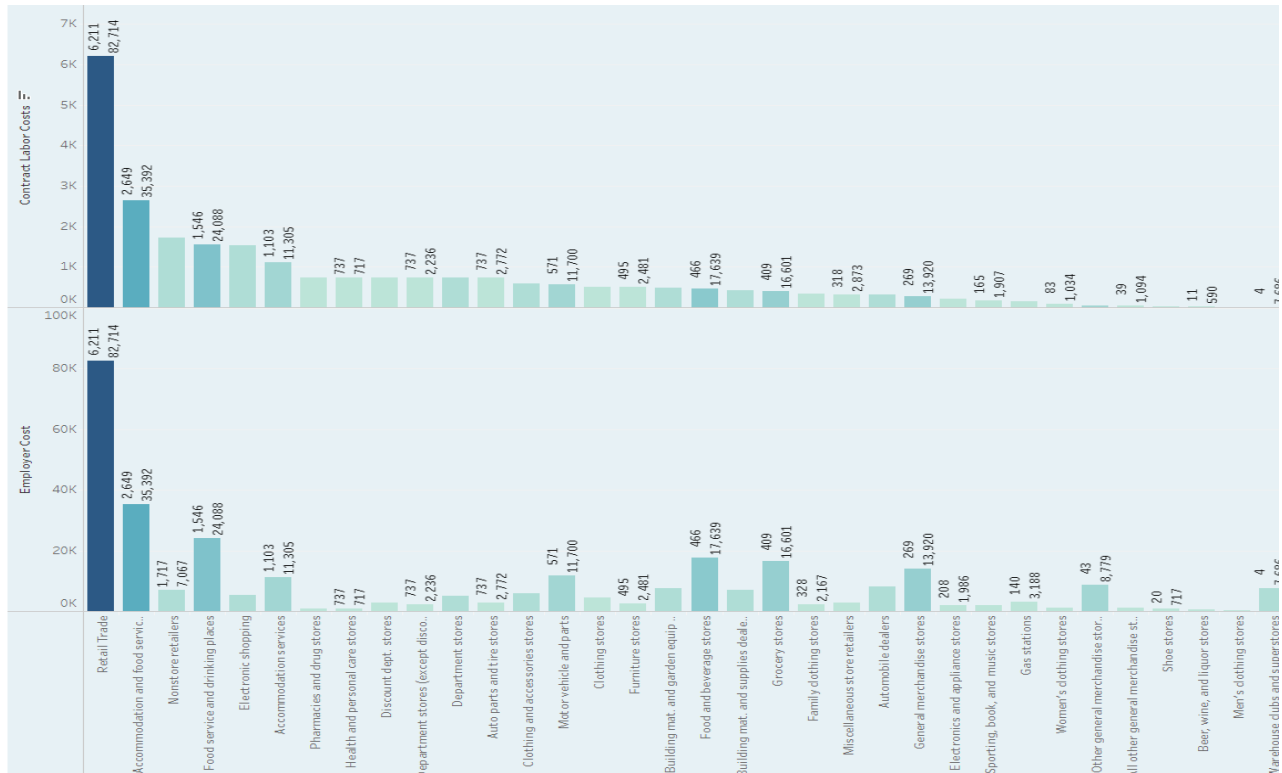
1. Annual payroll



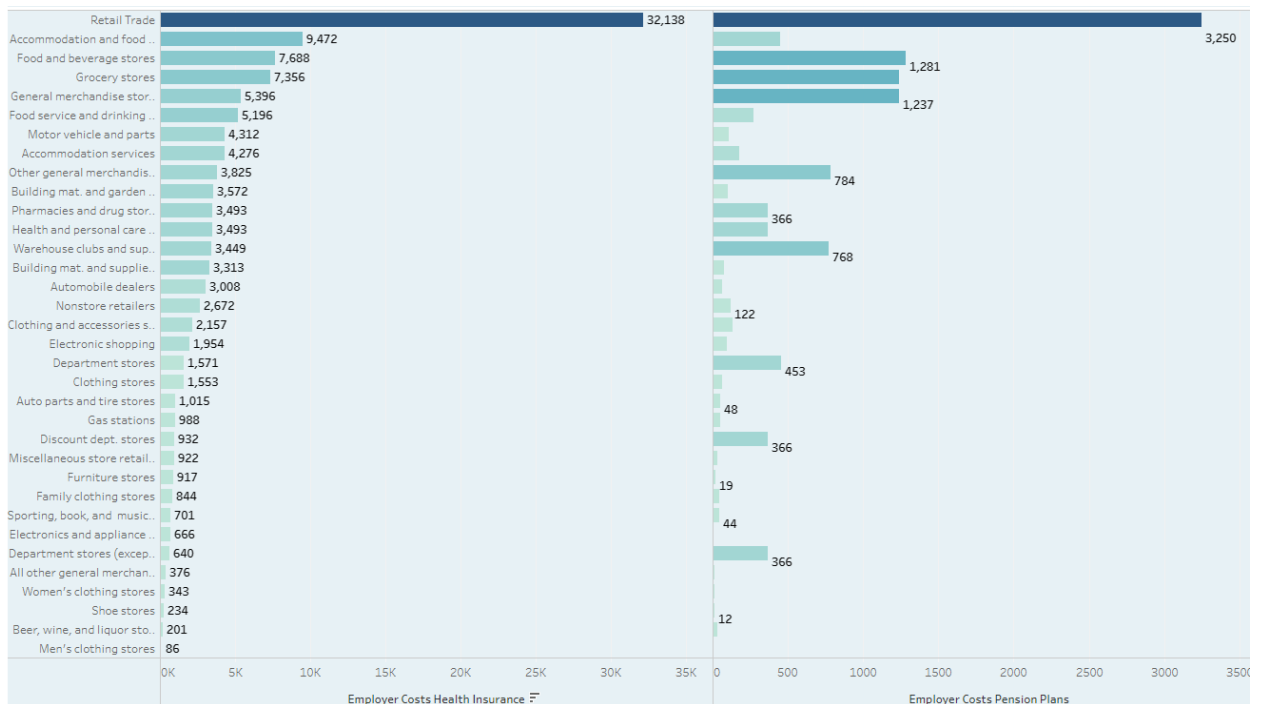
2. Advertisement cost



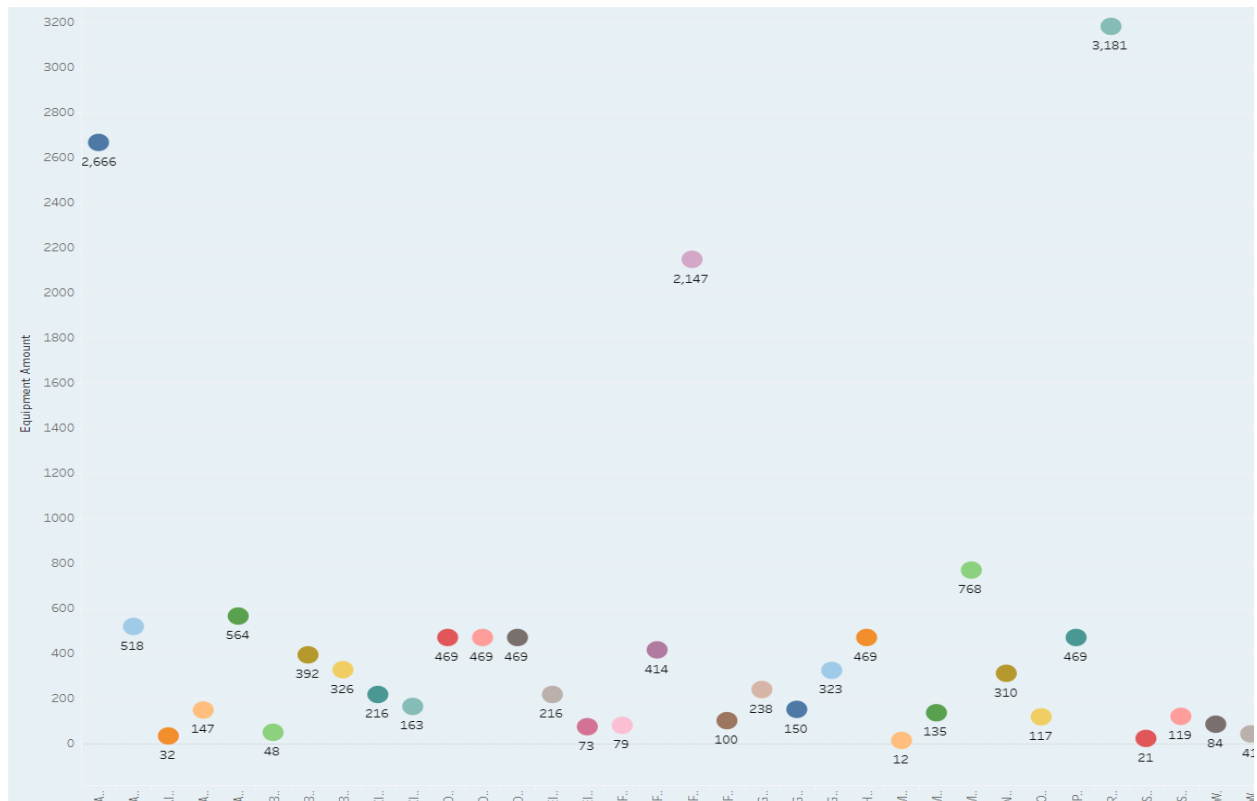
3. Contractor Labour vs Employee



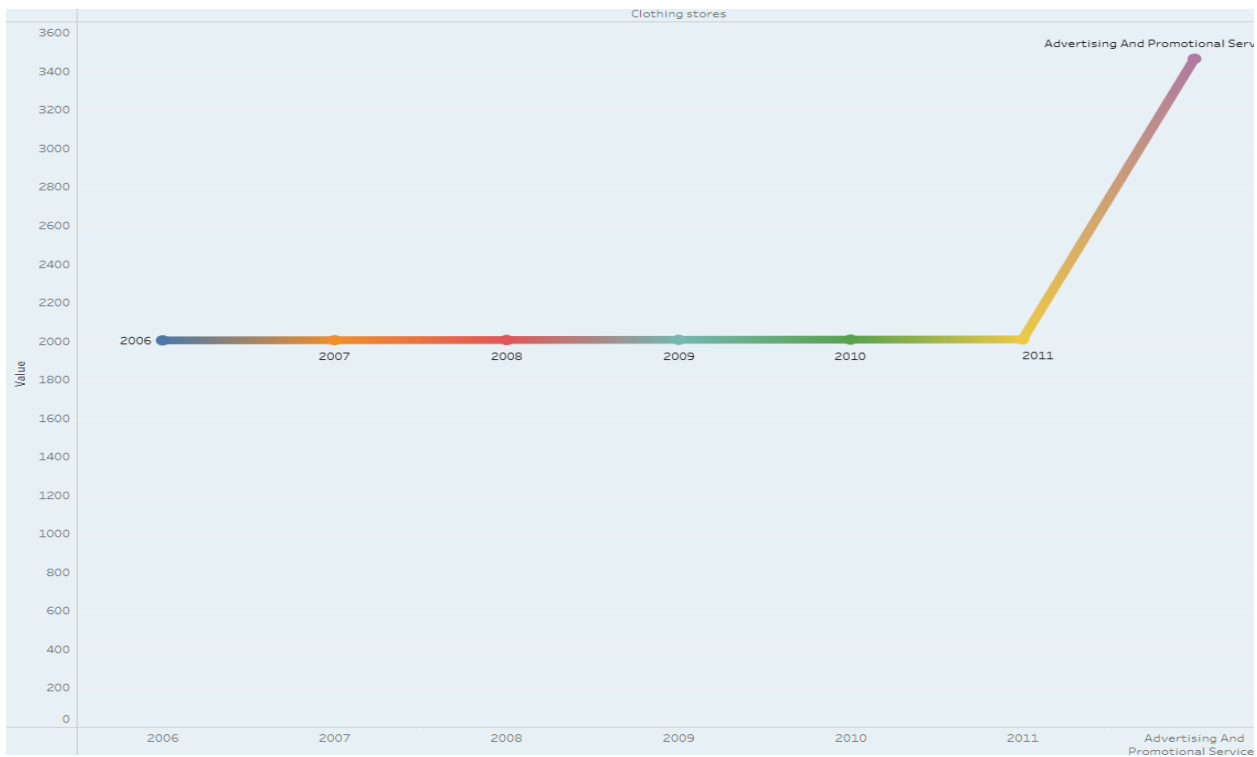
4. Employee Cost (Insurance vs Pension)



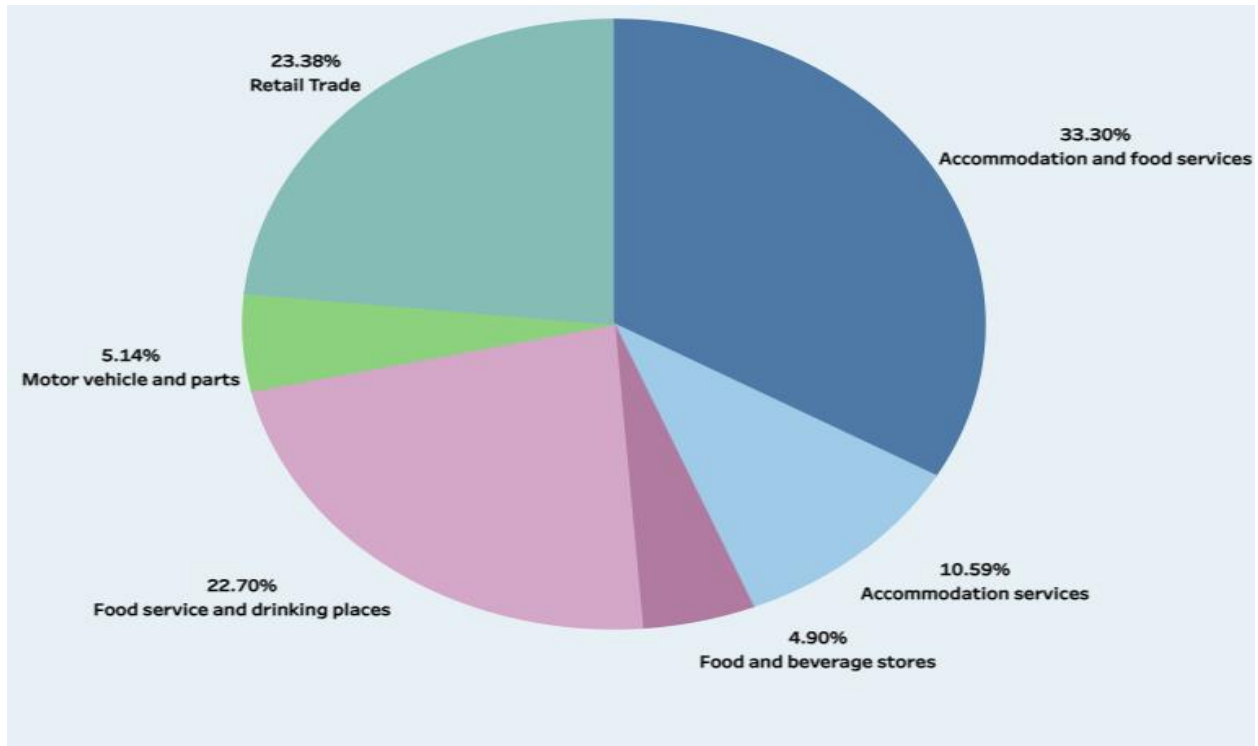
5. Equipment Costs



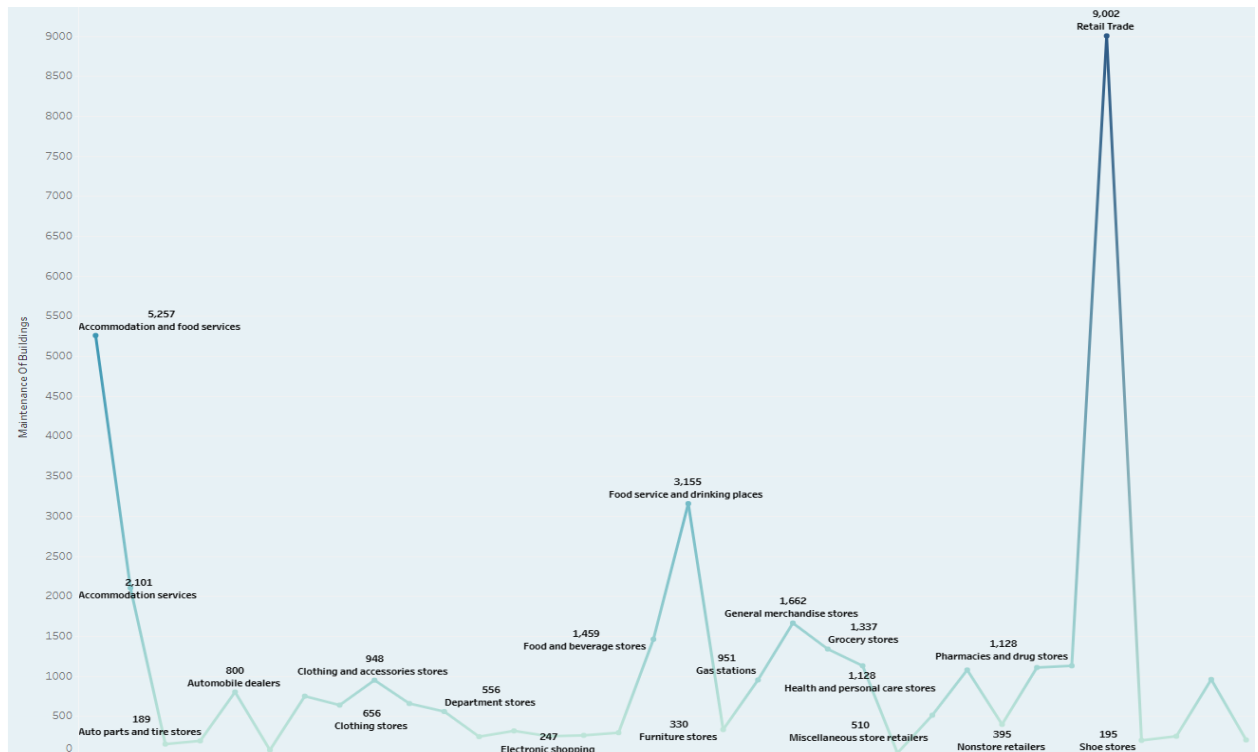
6. Expenses YoY



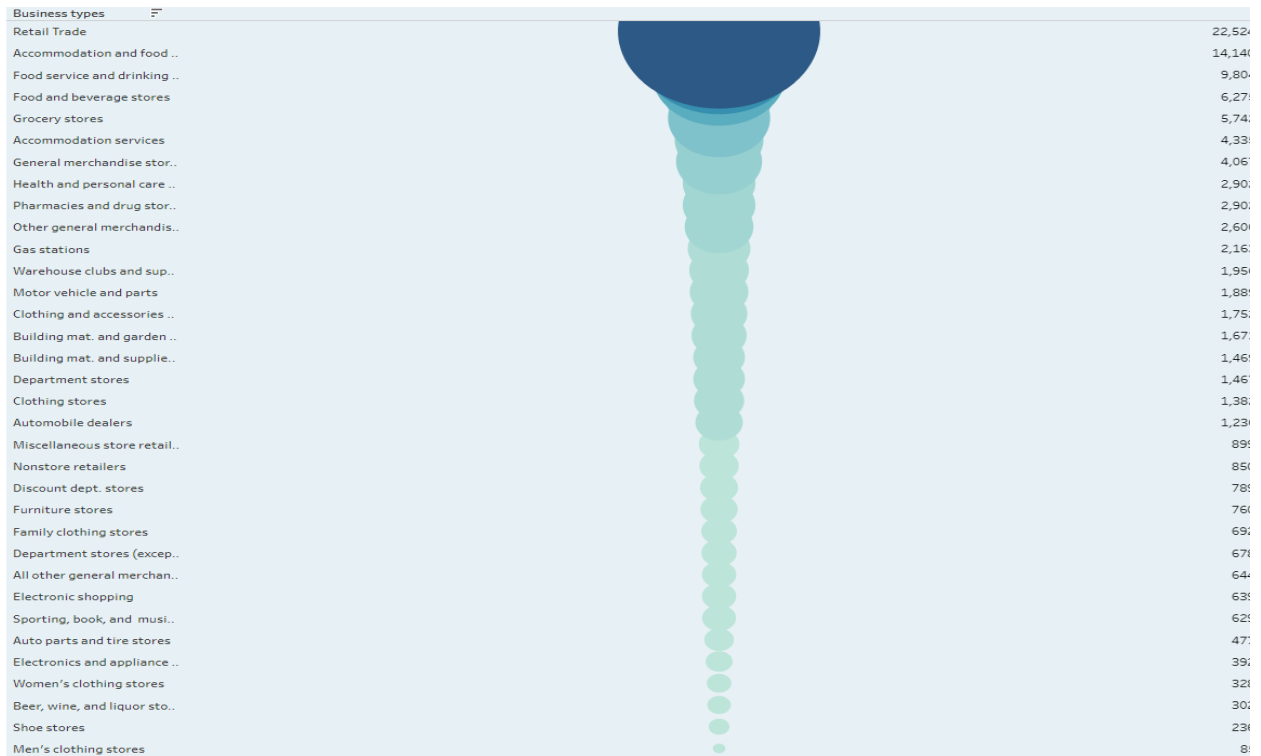
7. Fuel



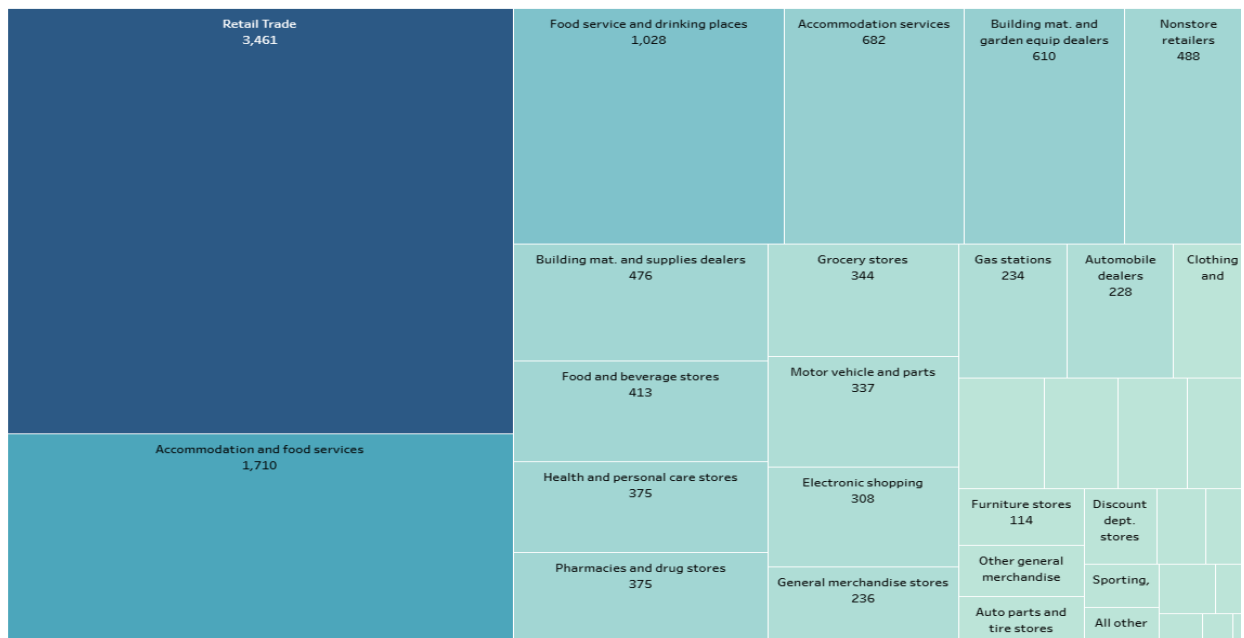
8. Maintenance of Buildings



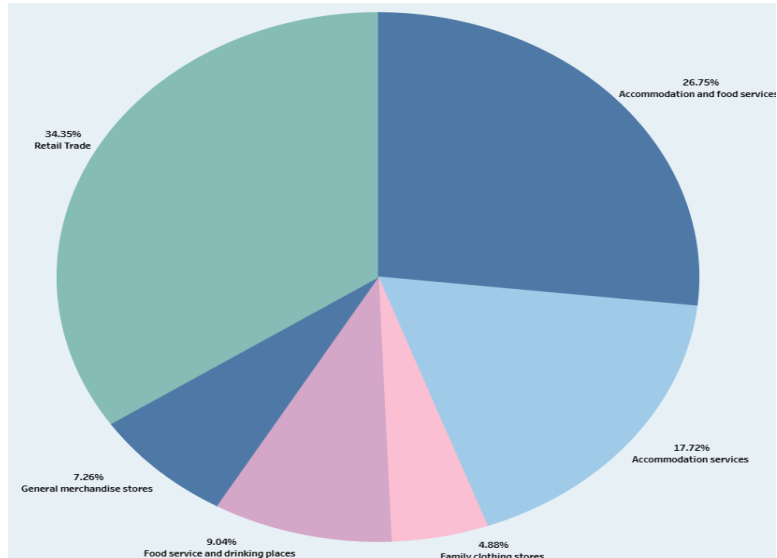
9. Power Expenditure



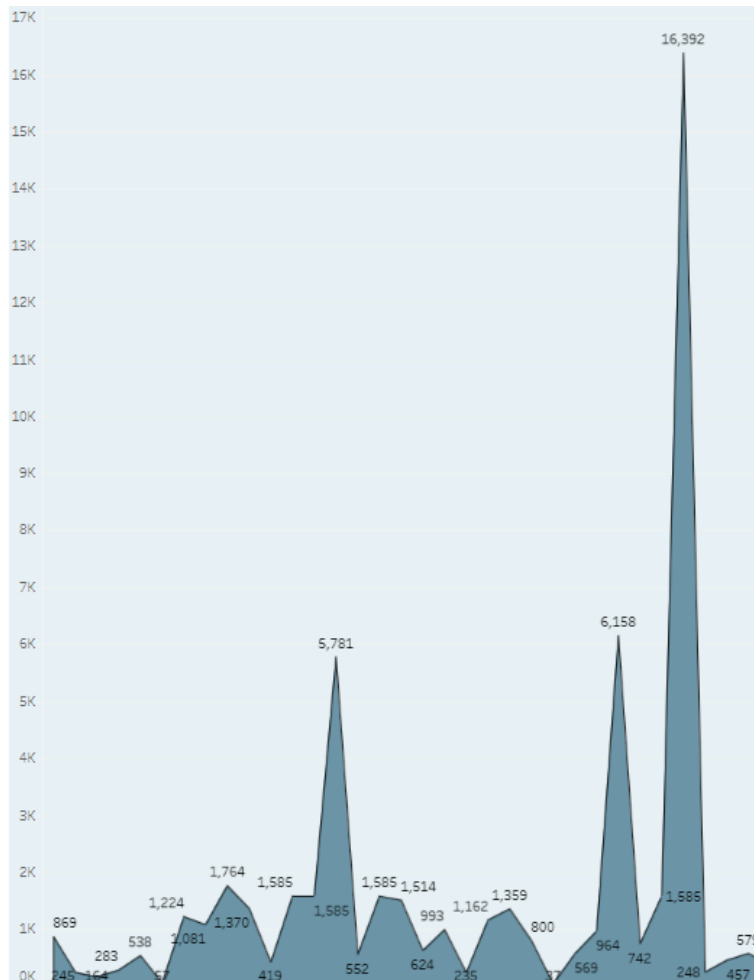
10. Rental Payment for Machinery



11. Taxes & licenses



12. Transportation & warehousing

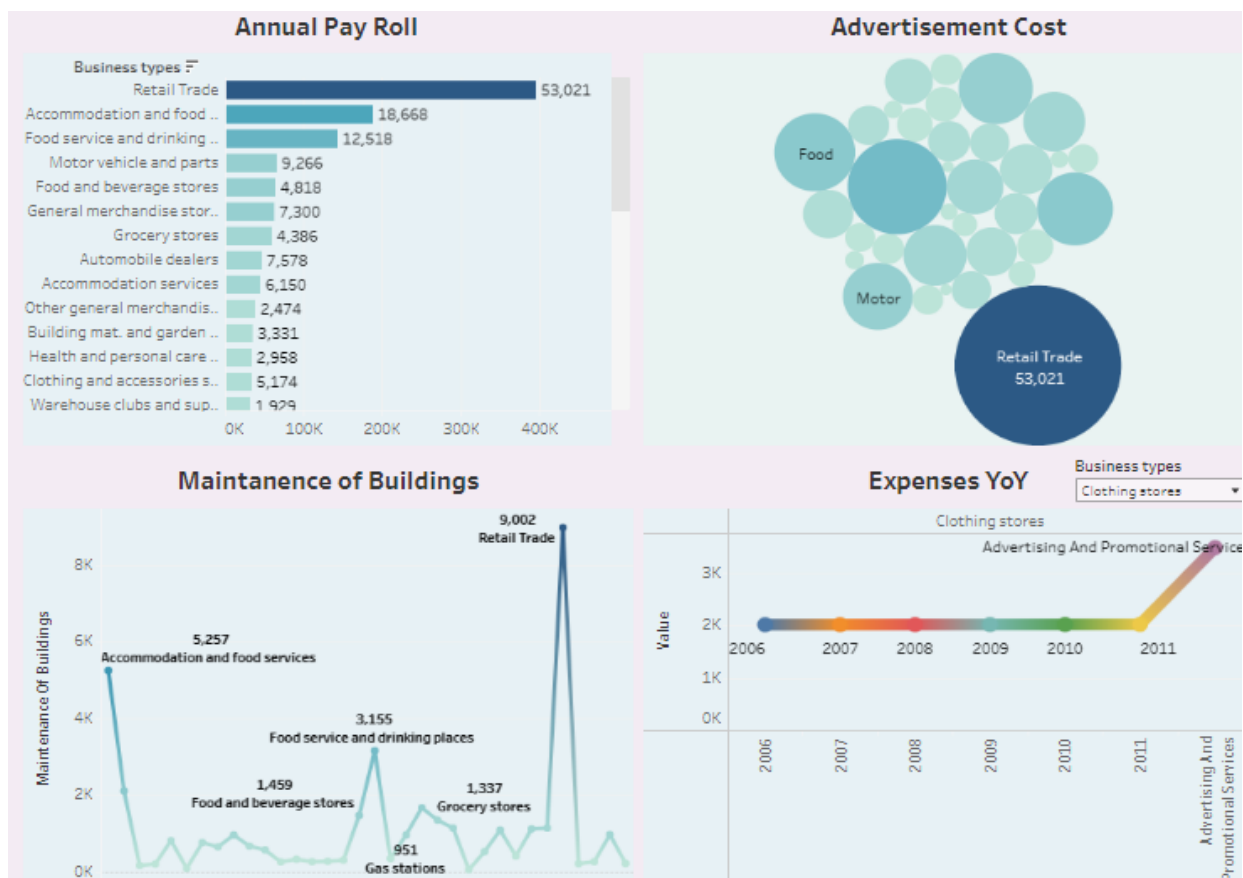


DASHBOARDS

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.

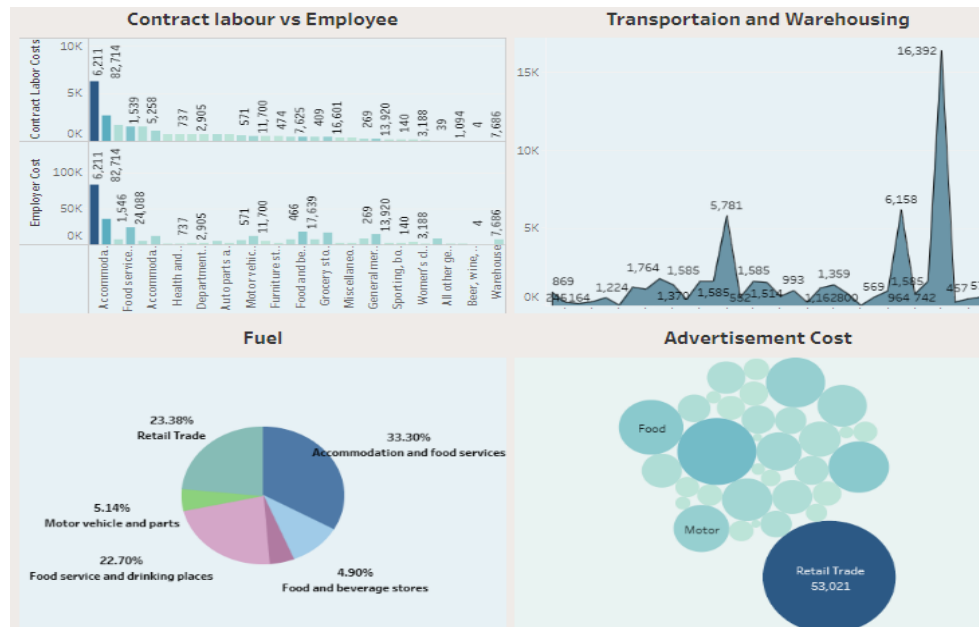
DASHBOARD 1

Expense Breakdown: Insights into Business Costs



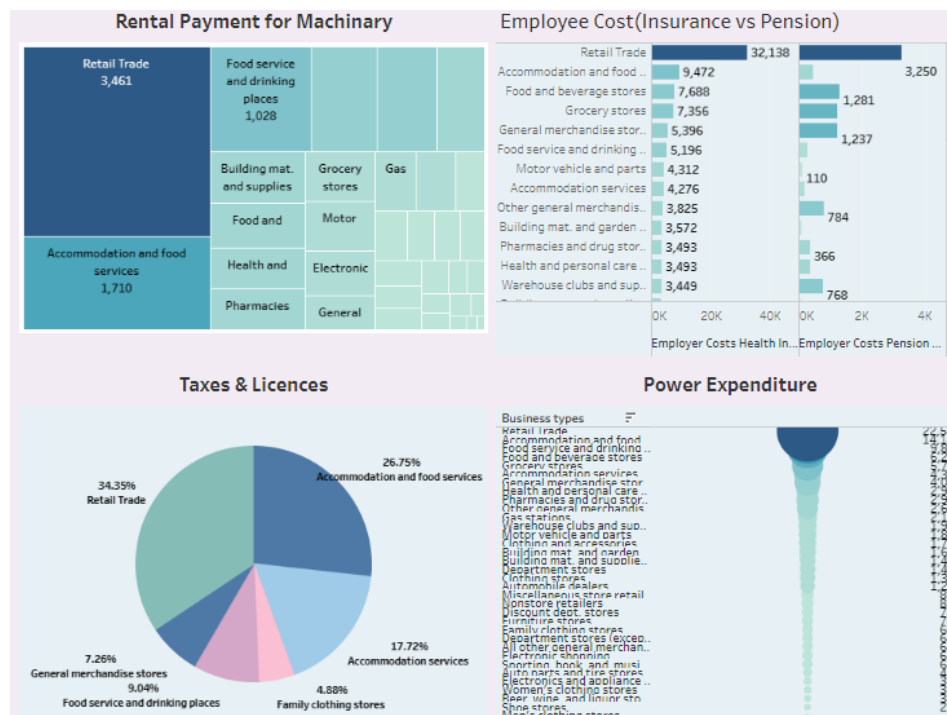
DASHBOARD 2

Business Expenditure Overview



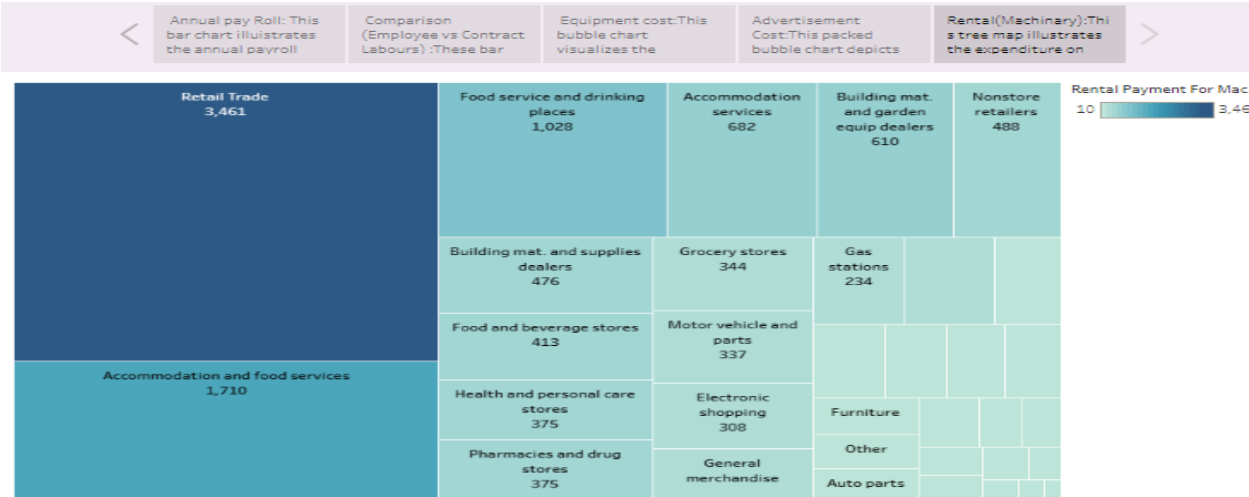
DASHBOARD 3

Expense Insights

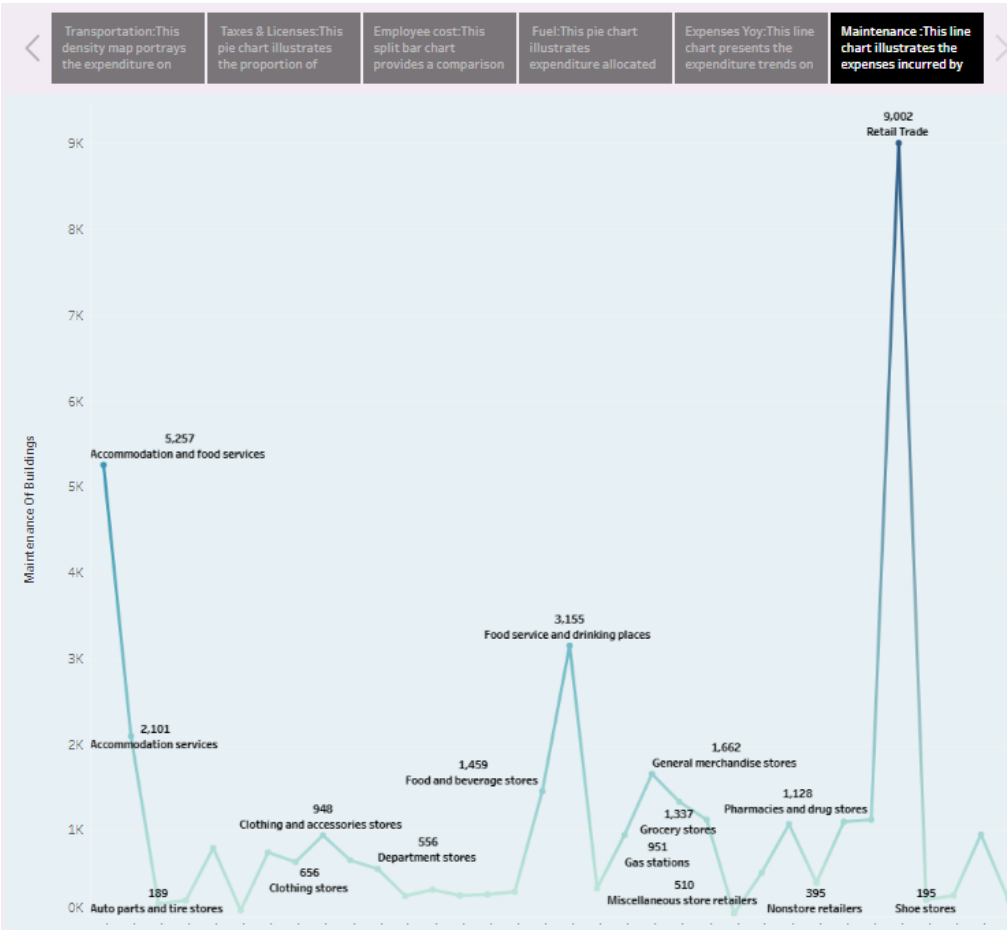


STORY

1. Expenses-1



2. Expenses-2

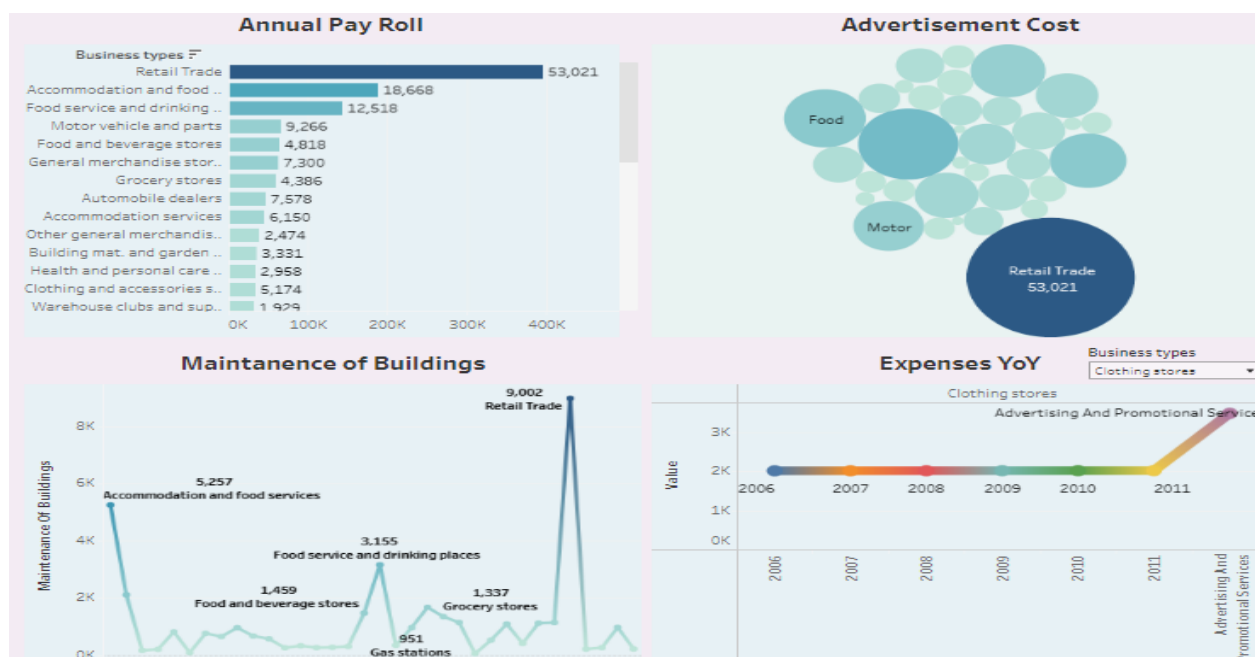


In the created story line we have a total of 12 scenes showcasing the details of created worksheets.

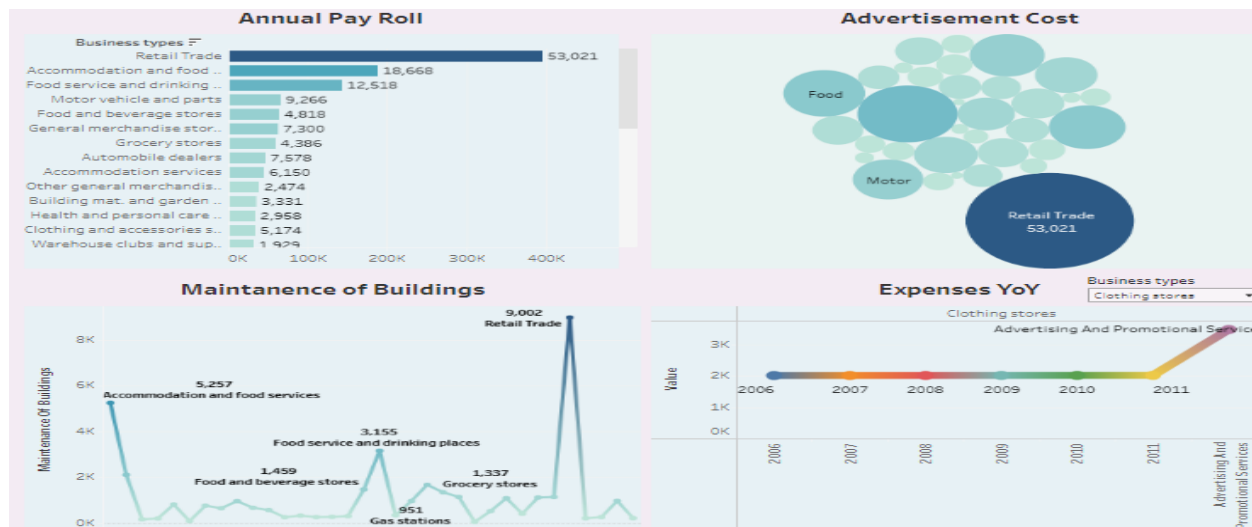
The visualization of sheets, story & dashboard are published in the tableau public server. The link for visiting the site is hyperlinked here – [Estimation of Business Expenses](#)

UTILIZATION OF DATA FILTERS

In every worksheet we can apply general or action filters based on input data provided to create visualizations. Based on these action filters the visualizations can be changed in certain aspects of categorizations (i.e., age, gender, departments etc.). For an example, the below dashboard represents data without any filters



Now if we apply an action filter based on the field of education, we can get data in accordance with the type of filter applied. The below dashboard represents data when filter is applied



Now we can see that, our dashboard's visualizations have been changed when we apply a filter in the field of education from all fields to employees with only bachelor's degree.

This is one of the examples for utilization of filters.

LINKS TO ACCESS PROJECT FILES:

1. [GitHub Repository.](#)
2. [Brainstorming Map.](#)
3. [Empathy Map.](#)
4. [Dashboard](#) uploaded in GitHub.
5. [Tableau Public server – Estimation of Business Expenses](#)
6. [Story](#) uploaded in GitHub.
7. [Visualization of sheets](#) is uploaded in GitHub as images compiled in a folder.

ADVANTAGES

1.Budgeting: Estimating expenses helps in creating a budget, which is a roadmap for allocating resources and ensuring that the organization's financial goals are met.

2.Financial Planning: It allows for better financial planning by helping businesses anticipate their cash flow needs, allocate funds for different purposes, and set realistic financial goals.

3.Resource Allocation: Businesses can allocate resources efficiently, ensuring that they have enough funds for both essential expenses and growth initiatives. This prevents overspending in certain areas while neglecting others.

4.Cost Control: Expense estimation enables businesses to identify areas where costs can be reduced or optimized. It helps in implementing cost-saving measures effectively.

5.Profitability Analysis: By estimating expenses accurately, businesses can calculate their expected profitability more precisely. This is crucial for making informed decisions about pricing, product/service offerings, and investment opportunities.

6.Investor Confidence: When seeking investment or loans, having a well-estimated expense plan demonstrates financial responsibility and increases investor confidence in the business.

7.Risk Management: Estimating expenses helps identify potential financial risks and allows businesses to develop contingency plans to address unexpected challenges or fluctuations in costs.

8.Resource Efficiency: It promotes efficient use of resources by ensuring that funds are allocated to activities and expenses that contribute most to the organization's goals.

9.Performance Evaluation: Comparing estimated expenses with actual expenses allows for performance evaluation. If actual expenses deviate significantly from estimates, it prompts businesses to investigate and make necessary adjustments.

10.Strategic Decision-Making: Expense estimation provides the information needed for strategic decision-making, such as expanding operations, entering new markets, or launching new products or services.

11.Tax Planning: Accurate estimation of expenses helps with tax planning, allowing businesses to take advantage of tax deductions and credits, ultimately reducing their tax liability.

12.Compliance: In certain industries or jurisdictions, businesses are required to provide accurate expense estimates for regulatory compliance and reporting purposes.

13.Vendor Negotiations: When businesses can estimate their expenses accurately, they are in a better position to negotiate favorable terms with vendors and suppliers, potentially lowering costs.

14.Cash Flow Management: Expense estimation helps in managing cash flow effectively by predicting when expenses will occur and ensuring that sufficient funds are available to cover them.

15.Stakeholder Communication: Clear and accurate expense estimates are essential for communicating financial plans and expectations to stakeholders, including employees, investors, and creditors.

In summary, the estimation of business expenses is a fundamental financial practice that provides numerous advantages, including better financial planning, cost control, risk management, and support for strategic decision-making, ultimately contributing to the long-term success of the organization

DISADVANTAGES

While estimating business expenses is a critical financial practice, it also comes with certain disadvantages and challenges that organizations should be aware of:

1.Inaccuracy: Estimations may not always be accurate, leading to discrepancies between projected and actual expenses. This can result in budget overruns or unexpected financial shortfalls.

2.Unforeseen Costs: Some expenses may be difficult to predict, such as emergency repairs, legal fees, or regulatory changes. Estimations may not account for these unforeseen costs.

3.Overestimation or Underestimation: Businesses can sometimes overestimate or underestimate expenses, leading to suboptimal resource allocation. Overestimation may tie up funds unnecessarily, while underestimation can lead to financial strain.

4.Time-Consuming: Developing detailed expense estimates can be time-consuming, requiring data collection, analysis, and constant updates. This can divert resources from other important tasks.

5.Resource Allocation Constraints: Over-reliance on expense estimates may constrain resource allocation flexibility, making it difficult to adapt to changing market conditions or emerging opportunities.

6.Rigidity: Strict adherence to budgeted expenses may hinder adaptability, preventing businesses from taking advantage of unforeseen opportunities or addressing unexpected challenges.

7.Estimation Errors: Errors in estimation techniques or the use of outdated data can lead to inaccurate expense projections, potentially affecting the overall financial health of the organization.

8.Lack of Granularity: Estimations may not always provide the level of granularity needed for effective decision-making, especially in complex organizations with diverse operations.

9.Overemphasis on Short-Term Goals: Excessive focus on short-term expense estimation may lead to neglecting long-term strategic planning and investments.

10.Pressure to Meet Targets: Managers and employees may feel pressured to meet or exceed expense targets, which can lead to cutting necessary expenses or compromising on quality.

11.Neglecting Non-Financial Factors: Expense estimation primarily focuses on financial aspects and may overlook non-financial factors such as employee morale, customer satisfaction, or environmental impact.

12.Resistance to Change: Teams and departments may resist changes to expense estimates, especially if they perceive them as a threat to their budgets or job security.

13.Cost of Estimation: The process of estimating expenses itself can be costly, requiring software, personnel, and other resources. This cost may not always provide a commensurate return on investment.

14.Limited Predictive Power: Even well-constructed expense estimates may not always accurately predict future financial conditions due to external factors beyond the organization's control.

15.Complexity: Expense estimation can become highly complex in large, diversified organizations with numerous cost centers and variables to consider, making it challenging to maintain accuracy.

In conclusion, while estimating business expenses is a valuable financial practice, it is not without its drawbacks. Organizations must strike a balance between the benefits of expense estimation and the potential disadvantages, striving for accuracy and flexibility in their financial planning processes.

APPLICATIONS

The estimation of business expenses is a fundamental financial practice that finds application in various aspects of business management. Here are some key applications of estimating business expenses:

1.Budgeting: Expense estimation is the foundation of creating a budget for the business. It allows organizations to plan and allocate resources effectively, ensuring that income is sufficient to cover projected expenses.

2.Financial Planning: Expense estimation helps businesses develop comprehensive financial plans, setting clear financial goals and strategies for achieving them. It aids in aligning financial resources with organizational objectives.

3.Cost Control: Accurate expense estimates enable businesses to identify areas where costs can be controlled or reduced. This is essential for maintaining profitability and competitiveness.

4.Cash Flow Management: By estimating expenses, businesses can anticipate when and how much cash will be required to cover operating costs, helping them manage cash flow effectively to avoid financial crises.

5.Pricing Strategies: Expense estimation assists in setting appropriate prices for products or services. Understanding cost structures helps businesses determine the minimum pricing necessary to achieve profitability.

6.Investor Relations: When seeking investments or loans, businesses must provide accurate expense projections to demonstrate financial responsibility and reassure investors or creditors about the company's financial health.

7.Resource Allocation: Expense estimates guide the allocation of resources, ensuring that funds are allocated to critical functions and projects. This prevents resource shortages in key areas.

8.Performance Evaluation: Comparing estimated expenses with actual expenses allows for performance evaluation. Deviations from estimates can indicate areas that need attention or improvement.

9.Strategic Decision-Making: Expense estimation provides the data needed for strategic decisions such as expanding operations, entering new markets, or launching new products or services.

10.Tax Planning: Accurate expense estimation is crucial for tax planning. It helps businesses take advantage of tax deductions, credits, and incentives while ensuring compliance with tax laws.

11.Vendor Negotiations: Detailed expense estimates enable businesses to negotiate better terms with vendors and suppliers, potentially reducing procurement costs.

12.Risk Management: Expense estimation helps identify potential financial risks and allows businesses to develop risk mitigation strategies, ensuring they can handle unexpected cost fluctuations.

13.Operational Efficiency: Understanding expense patterns enables businesses to optimize operations and streamline processes, reducing waste and inefficiency.

14.Compliance: In some industries or regions, businesses are required to provide accurate expense estimates for regulatory compliance and reporting purposes.

15.Stakeholder Communication: Clear and accurate expense estimates are crucial for communicating financial plans and expectations to stakeholders, including employees, shareholders, and board members.

16.Capital Allocation: Businesses use expense estimates to decide how much capital to allocate to various projects and initiatives, ensuring that investments align with strategic goals.

CONCLUSION

In summary, the estimation of business expenses is a versatile tool that plays a central role in financial planning, decision-making, and overall business management. It helps organizations allocate resources efficiently, control costs, and work towards their financial objectives.

the estimation of business expenses is a vital financial practice, offering benefits such as effective budgeting, financial planning, cost control, and risk management. However, it can be subject to inaccuracies and may lead to rigid resource allocation. Nonetheless, it plays a pivotal role in various business aspects, including pricing, investor relations, and strategic decision-making, enabling organizations to allocate resources wisely, control costs, and achieve their financial objectives while navigating the complexities of the business environment.

FUTURE SCOPE

The future scope of "estimation of business expenses" is expected to evolve in response to ongoing technological advancements and changes in business practices. Here are some potential future developments and trends in this field:

1.Advanced Analytics and AI: The use of advanced data analytics and artificial intelligence (AI) algorithms will become more prevalent for expense estimation. Machine learning models can analyze historical data to improve the accuracy of expense projections and identify cost-saving opportunities.

2.Real-Time Expense Tracking: With the increasing availability of real-time financial data, businesses will be able to track expenses continuously, enabling more agile financial decision-making and immediate cost control measures.

3.Integration with Financial Software: Expense estimation tools will continue to integrate with accounting and financial software, streamlining the budgeting and financial planning process, and making it more accessible to businesses of all sizes.

4.Data-driven Decision-Making: Businesses will increasingly rely on data-driven decision-making, using expense estimates to inform strategic choices, optimize operations, and identify areas for growth.

5.Environmental and Sustainability Reporting: As sustainability becomes a more prominent concern, expense estimation will extend to include environmental and sustainability costs, allowing businesses to track and report their environmental impact accurately.

6.Cybersecurity Expenses: With the growing importance of cybersecurity, businesses will need to estimate and allocate expenses for cybersecurity measures to protect sensitive data and infrastructure.

7.Blockchain for Expense Verification: Blockchain technology may be used to securely and transparently verify expenses, reducing the risk of fraud and improving the accuracy of expense reporting.

8.Global Expansion: As businesses expand globally, expense estimation will need to account for international differences in taxation, regulatory compliance, and currency fluctuations.

9.Remote Work Expenses: The rise of remote work may require businesses to adapt their expense estimation practices to account for remote employee-related expenses, such as home office equipment and internet connectivity.

10.Regulatory Changes: Evolving regulations, especially in areas like tax and data privacy, will require businesses to update their expense estimation models to ensure compliance and minimize legal risks.

In conclusion, the future scope of "estimation of business expenses" is likely to embrace technological advancements, adapt to changing business dynamics, and incorporate new considerations like sustainability and cybersecurity. Accurate and data-driven expense estimation will continue to be a crucial element of effective financial management in businesses of all sizes.