

ESTIMATION OF BUSINESS EXPENSES



PROJECT SUBMITTED BY:

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INTRODUCTION:

A business estimate is a document detailing how much you plan on charging a customer for a good or service.

This involves estimating all the expenses required to start and operate the business, such as equipment, rent, inventory, and marketing. By calculating these costs upfront, business owners can better plan their budget and avoid unexpected expenses.

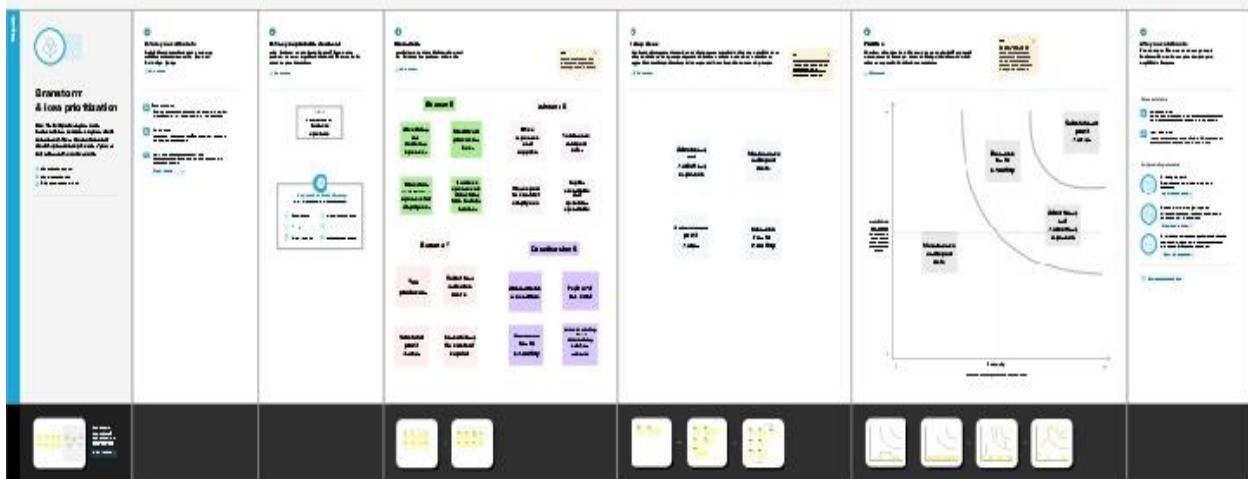
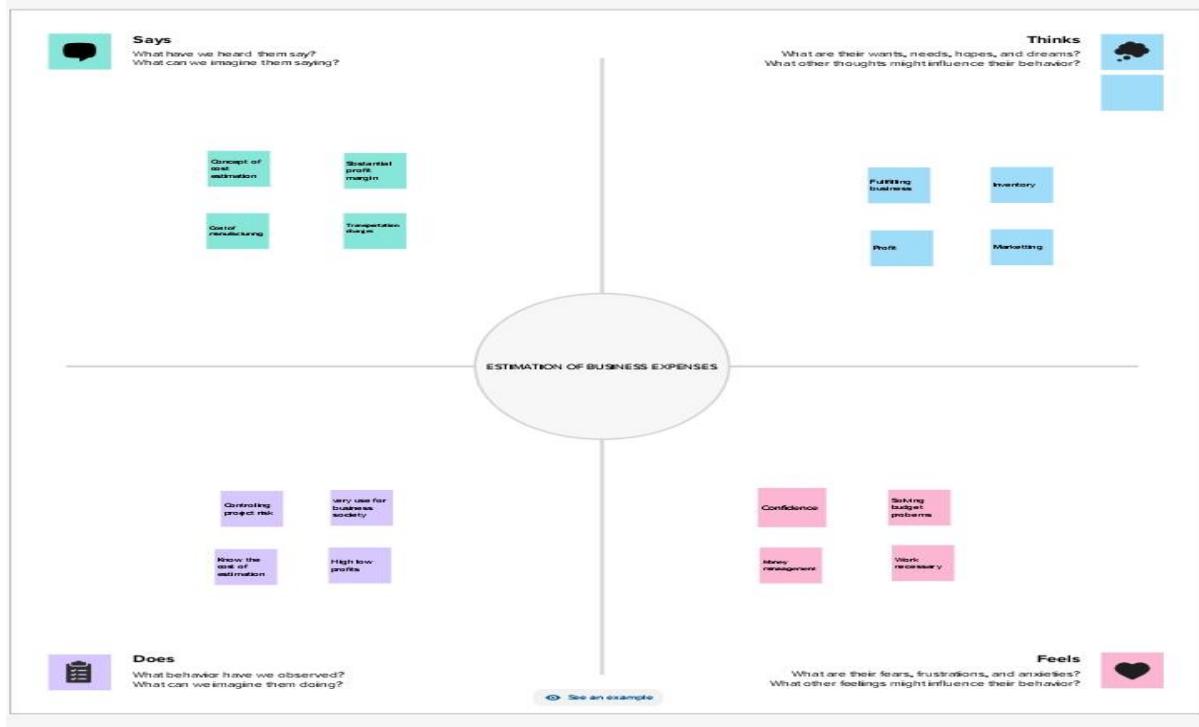
Estimated expense means the amount of the expenses which the Authority consider are properly to be incurred in the execution of the eligible works together with the amount of the costs which the Authority considers have been properly incurred, or are properly to be incurred, with respect to preliminary or ancillary.

Cost estimation is an indispensable process that provides numerous benefits to project management. These benefits include budget planning, resource allocation, risk management, improved decision - making, and competitive advantage.

Estimation is a key technique for predicting and controlling project risks. Accurate project estimates to aid in the identification of cost and schedule requirements with relative precision, lowering the danger of running out of time, resources, and money during a project.

Milestone 1: Define Problem / Problem Understanding

- ✓ Specify the business problem
- ✓ Business requirements
- ✓ Literature Survey
- ✓ Social or Business Impact



Milestone 2: Data Collection & Extraction

Activity 1: Downloading the dataset

The screenshot shows a Microsoft Excel window with the title bar 'cleaned_business [Protected View] - Excel (Product Activation Failed)'. The ribbon menu includes FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, and VIEW. The 'HOME' tab is selected, displaying various tools for cutting, copying, pasting, and formatting. The main content area contains a table with 33 rows and 29 columns. The first column is labeled 'naics_code' and the second is 'Business_type'. The data includes various business types like Retail Trade, Motor Vehicle dealers, Automobile dealers, Auto parts and accessories, Furniture store, Electronics, Building materials, Food and beverage, Grocery stores, Beer, wine, and liquor, Health and personal care, Pharmacies, Gas stations, Clothing and accessories, Clothing stores, Men's clothing, Women's clothing, Family clothing, Shoe stores, Sporting goods, bookstores, General merch, Department stores, and Office equipment, furniture, and supplies. The last column is 'data_processing'.

naics_code	Business_type	operating_exps	annual_payroll	employer_cost	employer_cost	employer_cost	employer_cost	employer_cost	contract_labor	expenses_equ	packaging_ma	parts_and_sup	purchases_of	data_processing
4445	Retail Trade	916307	394957	82714	32138	5899	3250	41427	6211	3181	5802	15964	2583	4425
441	Motor vehicle dealers	130153	65382	11700	4312	548	110	6729	571	768	150	2475	467	1824
4411	Automobile dealers	92263	46947	8107	3008	362	61	4676	305	564	90	1537	388	1660
4413	Auto parts and accessories	27870	13857	2772	1015	145	48	1564	737.1	147	39	727	50	109
442	Furniture store	34721	12898	2481	917	130	19	1416	495	100	154	528	88	99
443	Electronics and appliance stores	26027	11044	1986	666	123	7	1190	208	73	46	453	114	51
444	Building materials, hardware, and paint stores	74261	35414	7625	3572	588	98	3367	474	392	150	1480	198	162
4441	Building materials and supplies dealers	64850	31353	6864	3313	541	74	2936	426	326	94	1149	170	140
445	Food and beverage stores	147801	65074	17639	7688	1136	1281	7534	466	414	2224	2570	204	310
4451	Grocery stores	133425	59408	16601	7356	1091	1241	6913	409	323	2016	2329	184	260
4453	Beer, wine, and liquor stores	8357	3163	590	201	30	32	326	11	48	46	104	14	40
446	Health and personal care stores	72689	34156	717	3492.9	592	366.1	5158.9	737.1	469	803.2	2262.3	264.2	438.3
44611	Pharmacies and drug stores	53280	26322	717	3492.9	592	366.1	5158.9	737.1	469	803.2	2262.3	264.2	438.3
447	Gas stations	48418	17508	3188	988	255	53	1892	140	238	138	1031	83	151
448	Clothing and accessories stores	90188	33397	6006	2157	426	130	3292	595	216	747	1344	287	347
4481	Clothing stores	65589	24477	4360	1553	330	66	2411	498	163	636	1032	259	269
44811	Men's clothing	3474	1335	283	86	9	1	188	8	12	27	42	5	23
44812	Women's clothing	18546	6606	1034	343	76	15	600	83	41	175	285	50	39
44814	Family clothing	29823	11678	2167	844	189	43	1091	328	79	293	518	172	121
4482	Shoe stores	12400	4288	717	234	38	12	432	20	21	49	113	18	42
451	Sporting goods, bookstores, and music stores	27424	11008	1907	701	99	44	1063	165	119	169	392	99	224
452	General merchandise stores	132672	61898	13920	5396	689	1237	6598	269	150	424	2503	196	203
4521	Department stores	48579	23100	5140	1571	430	453	2686	737.1	469	229	886	172	178
452111	Department stores	20683	10210	2236	640	592	366.1	1196	737.1	469	141	306	100	165

Activity 1.1: Understand the data

Data consists of 33 rows which correspond to 33 different business types and 29 columns that correspond to different operating expenses.

Column Description of the Dataset:

Costs	Business Types
Operating expenses	Total Operating expenses
Annual payroll	Total yearly payment

Employer cost	Amount spent on employees
Employer costs health insurance	Amount spent on health insurance
Employer costs pension plans	Amount spent on pension plans for employees
Packaging materials and containers	Amount spent on packaging
Repairs and maintenance of equipment	Amount spent on repairs and maintenance

Activity 2: Connect Dataset with Tableau

The screenshot shows the Tableau Public interface with the following details:

- Title:** Tableau Public - Book1
- Connections:** A single connection named "cleaned_business" is selected.
- File:** Options include "Use Data Interpreter" (unchecked) and "Data Interpreter might be able to clean your Text file workbook."
- Fields:** A table of fields from the "cleaned_business.csv" file is displayed:

Type	Field Name	Phys...	Rem...
#	Naics Code	cleaned...	naics...
Abc	Business types	cleaned...	Busin...
#	Operating Expenses	cleaned...	operat...
#	Annual Payroll	cleaned...	annua...
#	Employer Cost	cleaned...	emplo...
#	Employer Costs Health Insu...	cleaned...	emplo...
#	Employer Costs Contributio...	cleaned...	emplo...
#	Emoloyer Costs Pension Pla...	cleaned...	emplo...
- Dashboard:** Shows three dashboards: Dashboard 1, Dashboard 2, and Dashboard 3.
- Bottom Navigation:** Includes a search bar, a taskbar with various icons, and system status indicators.

Milestone 3: Data Preparation

Activity 1: Prepare the Data for Visualization

The screenshot shows a Microsoft Excel spreadsheet titled "cleaned_business". The data consists of 25 rows and 20 columns. The columns are labeled with various business metrics and identifiers. The first few rows of data are as follows:

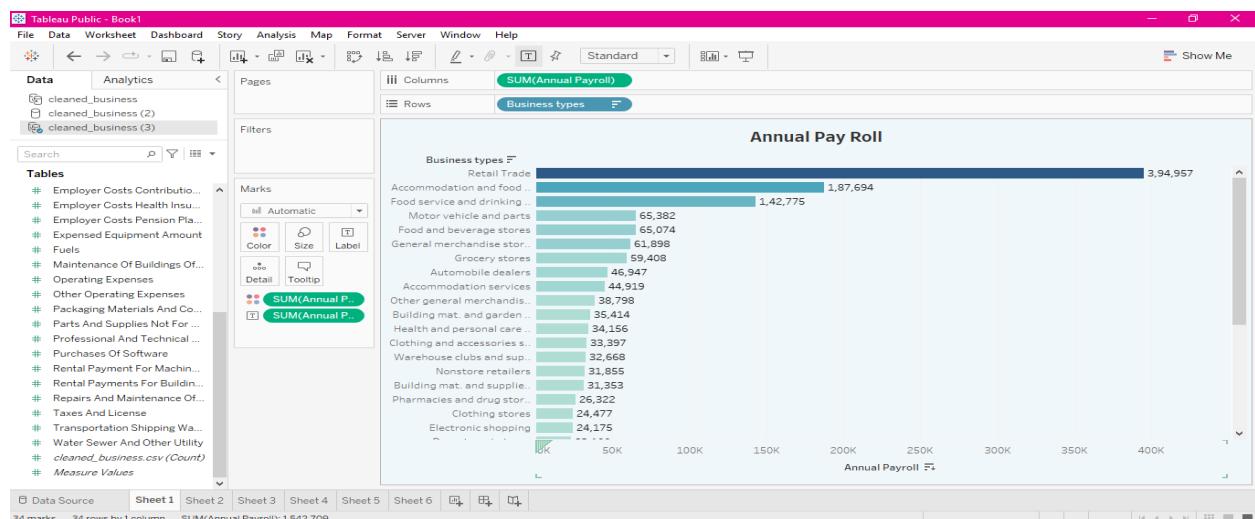
naics_code	Business_type	operating_expc	annual_payroll	employer_cost	employer_cost	employer_cost	employer_cost	employer_cost	contract_labor	expensed_eq	packaging_ma	parts_and_sup	purchases_of	data_processin
2	4445 Retail Trade	916307	394957	82714	32138	5699	3250	41427	6211	3181	5802	15964	2583	4425
3	441 Motor vehicle & motor equipment rental and leasing	130153	65382	11700	4312	548	110	6729	571	768	150	2475	467	1824
4	4411 Automobile dealers	92263	46947	8107	3008	362	61	4676	305	564	90	1537	388	1660
5	4413 Auto parts and supplies dealers	27870	13857	2772	1015	145	48	1564	737.1	147	39	727	50	109

Milestone 4: Data Visualization

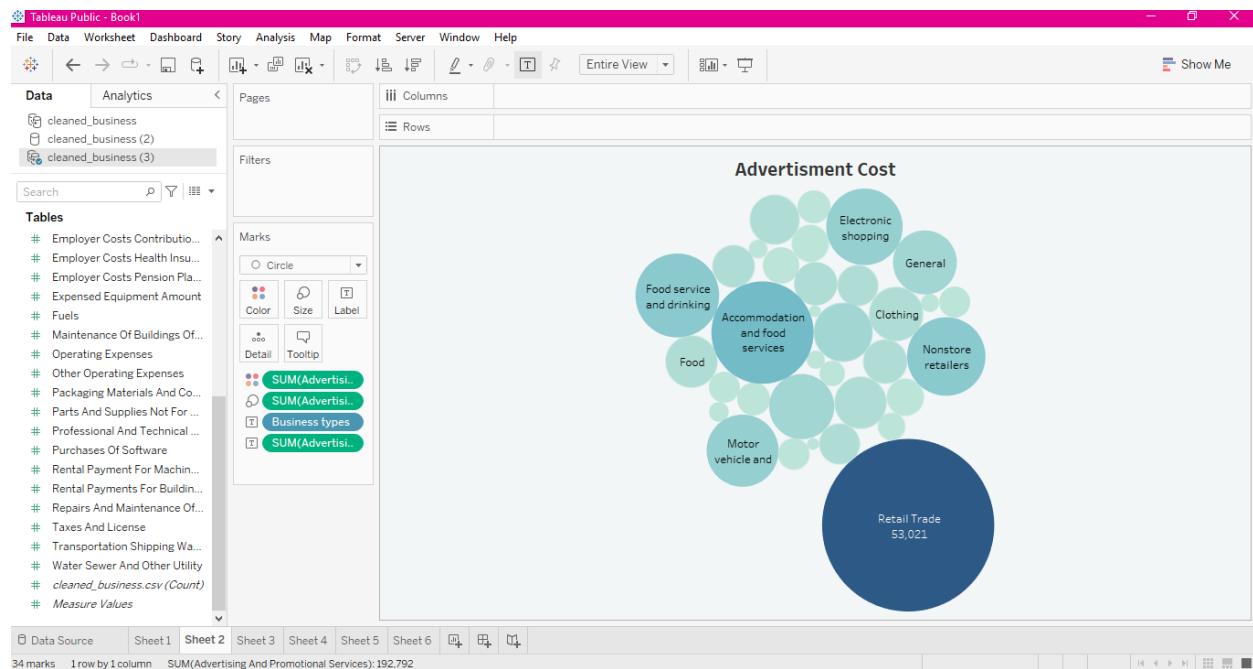
Activity 1: No of Unique Visualization

The number of unique visualization that can be created with a given dataset.

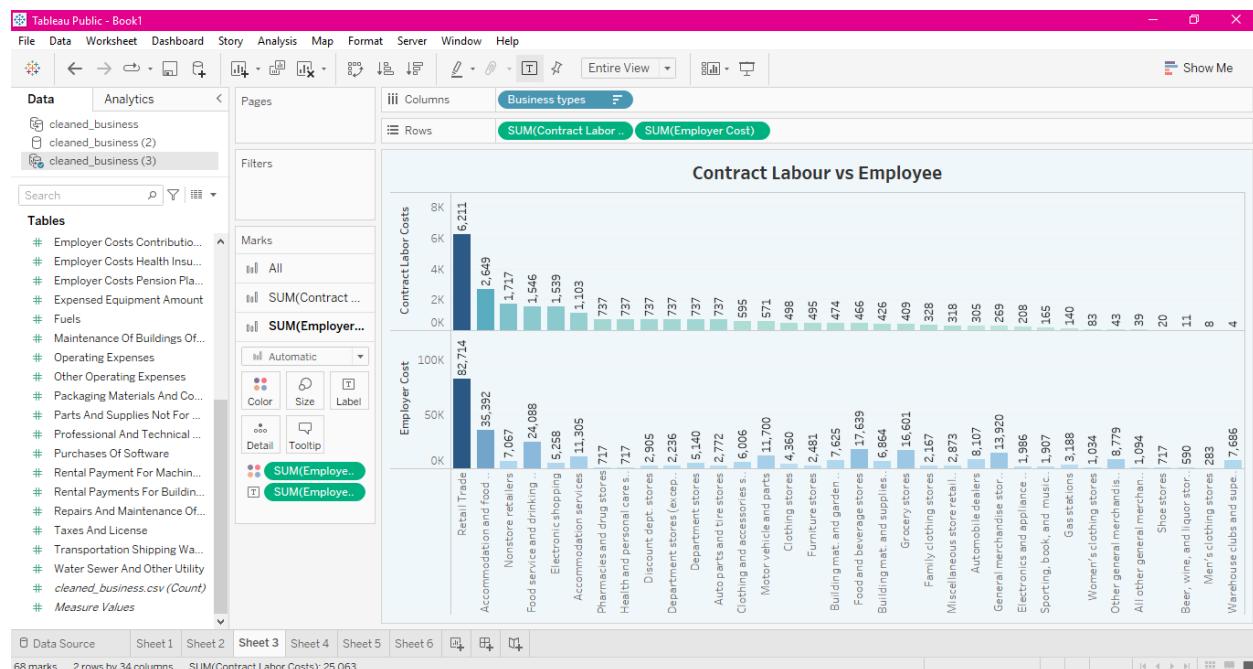
Activity 1.1: Annual Pay Roll



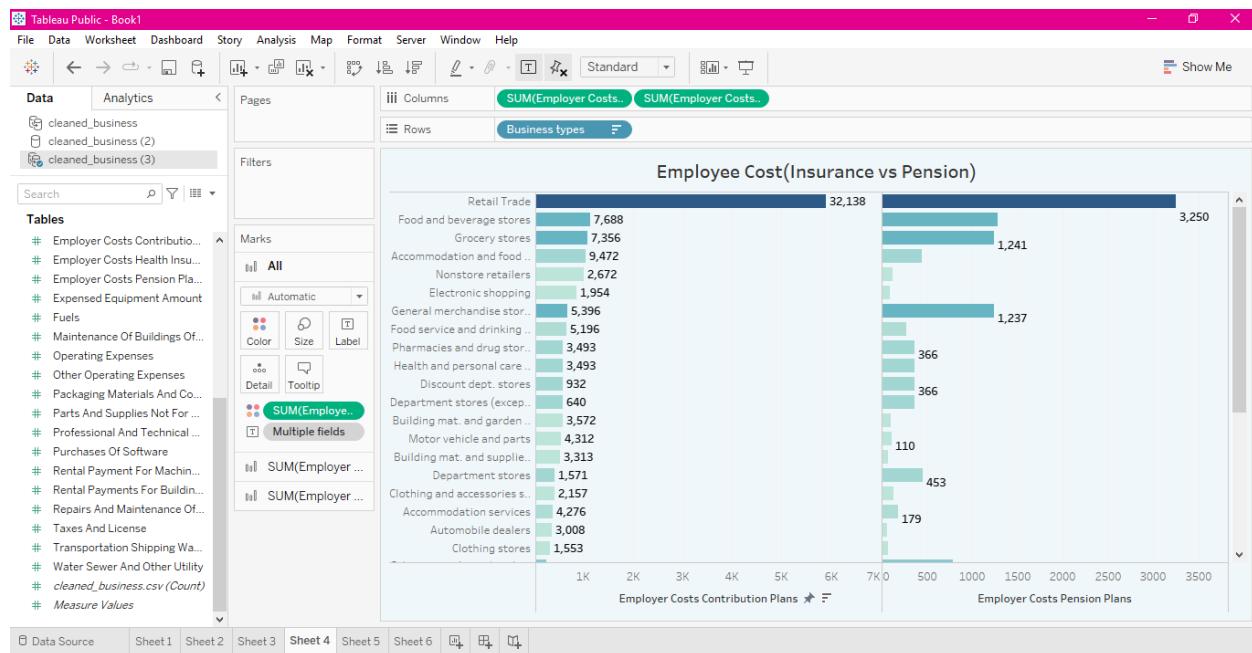
Activity 1.2: Advertisement Cost



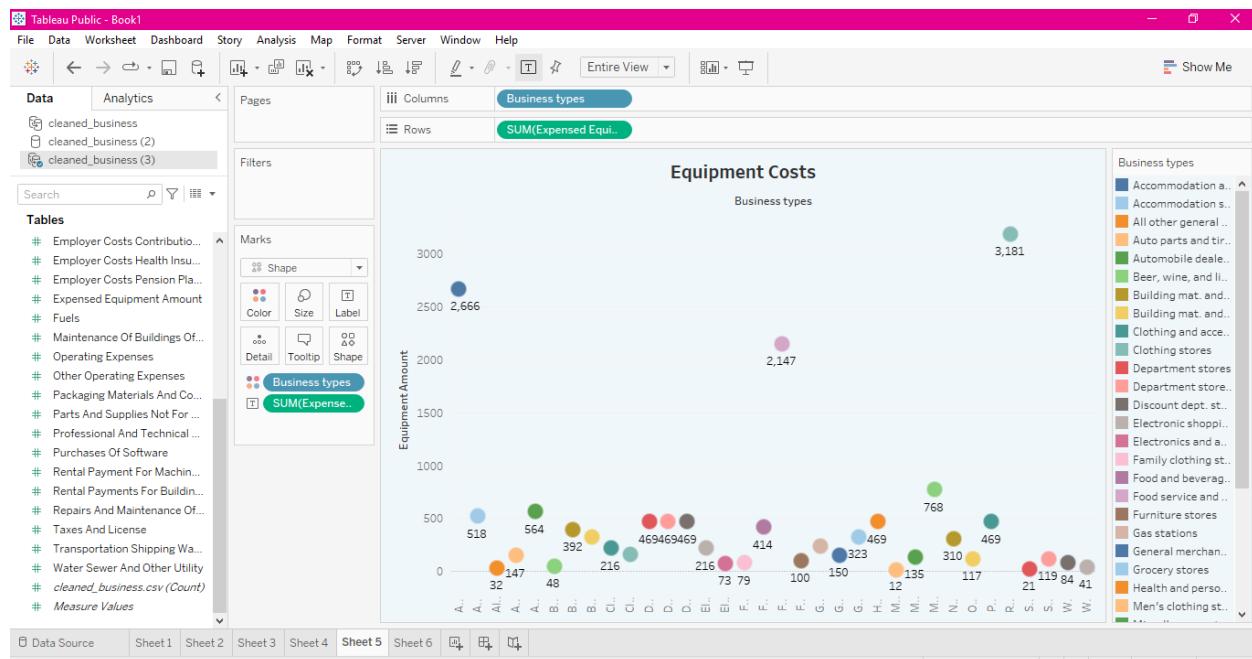
Activity 1.3: Contract Labor vs Employee



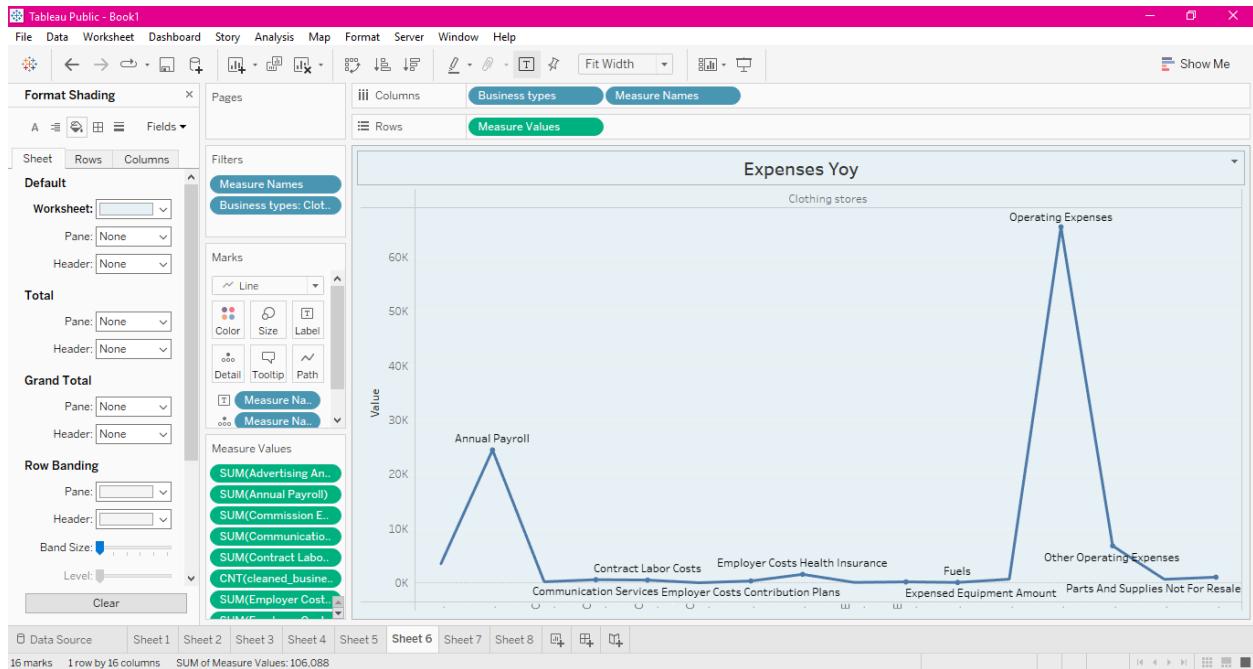
Activity 1.4: Employee (Insurance vs pension)



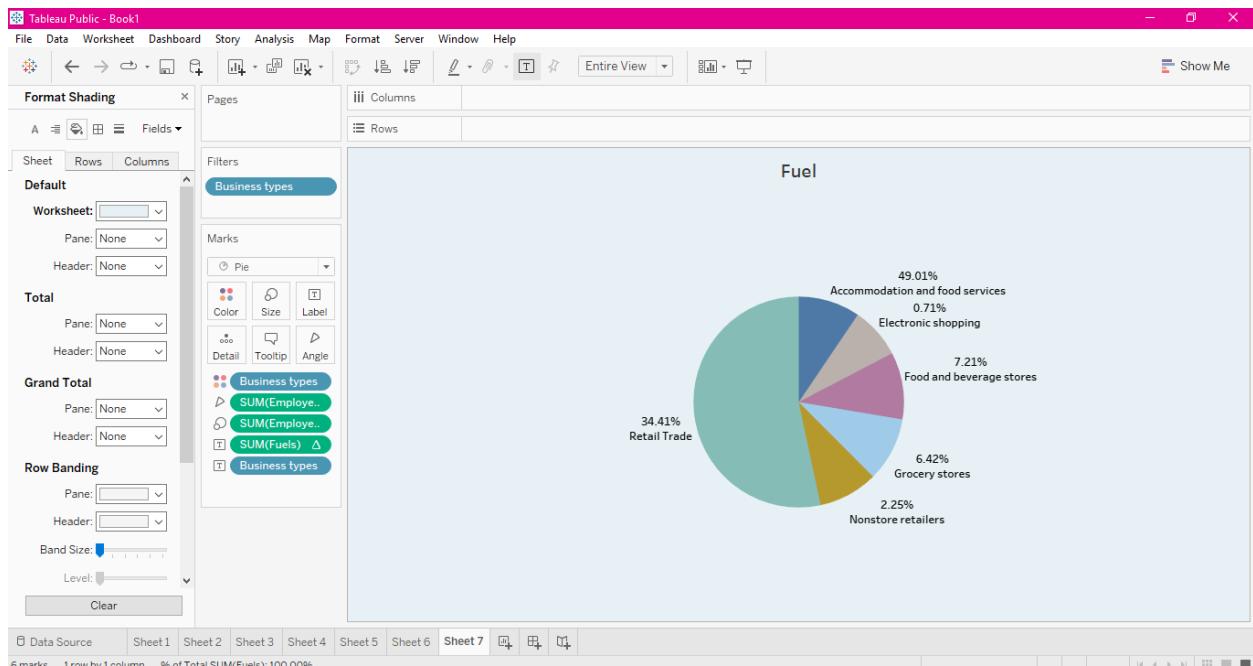
Activity 1.5: Equipment Costs



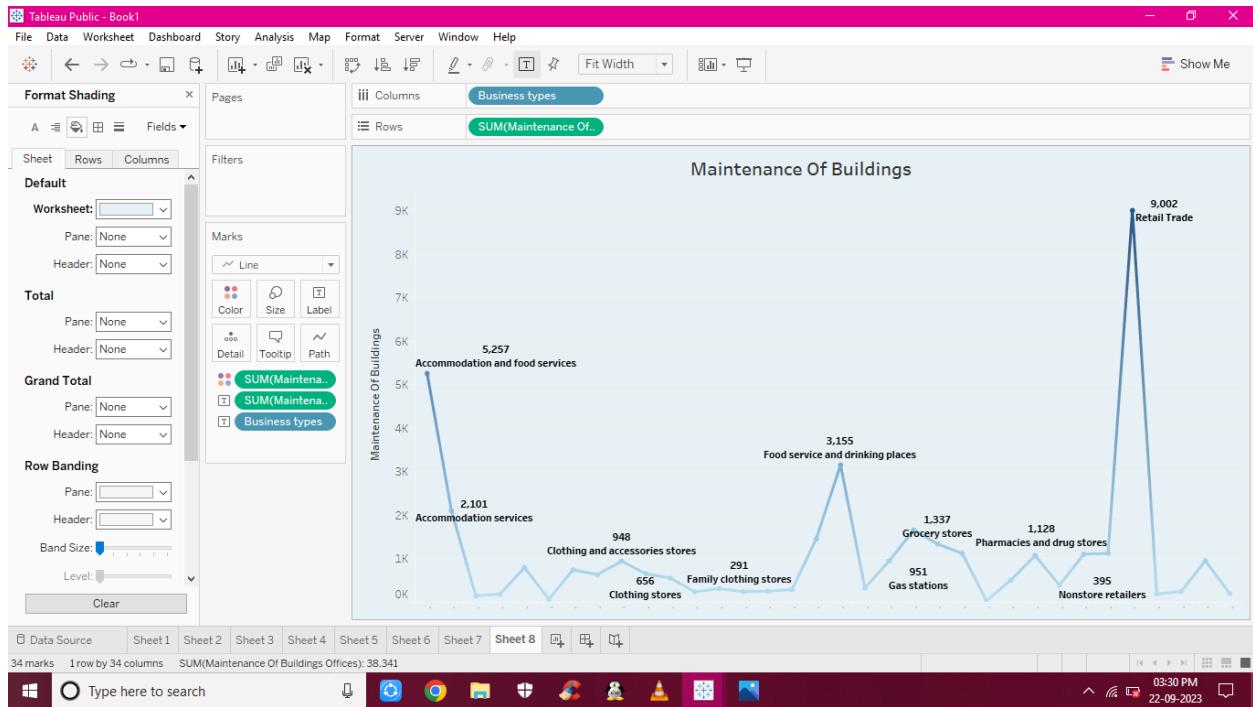
Activity 1.6: Expenses YoY



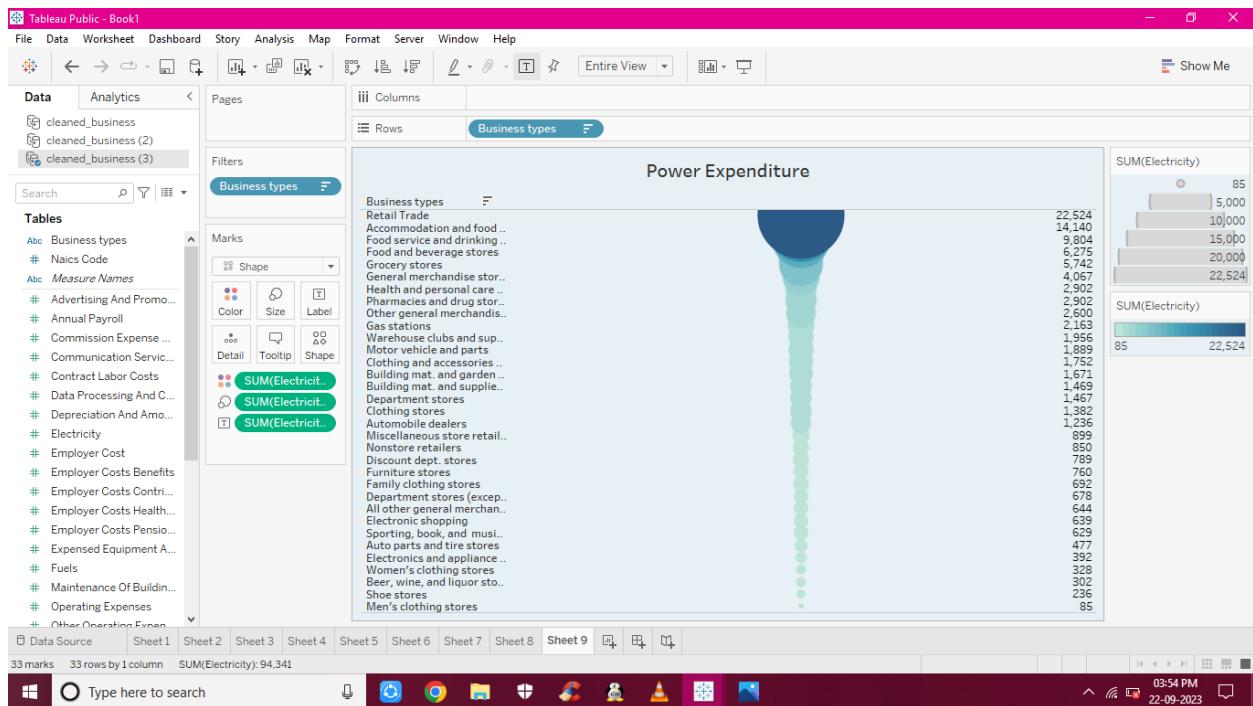
Activity 1.7: Fuel



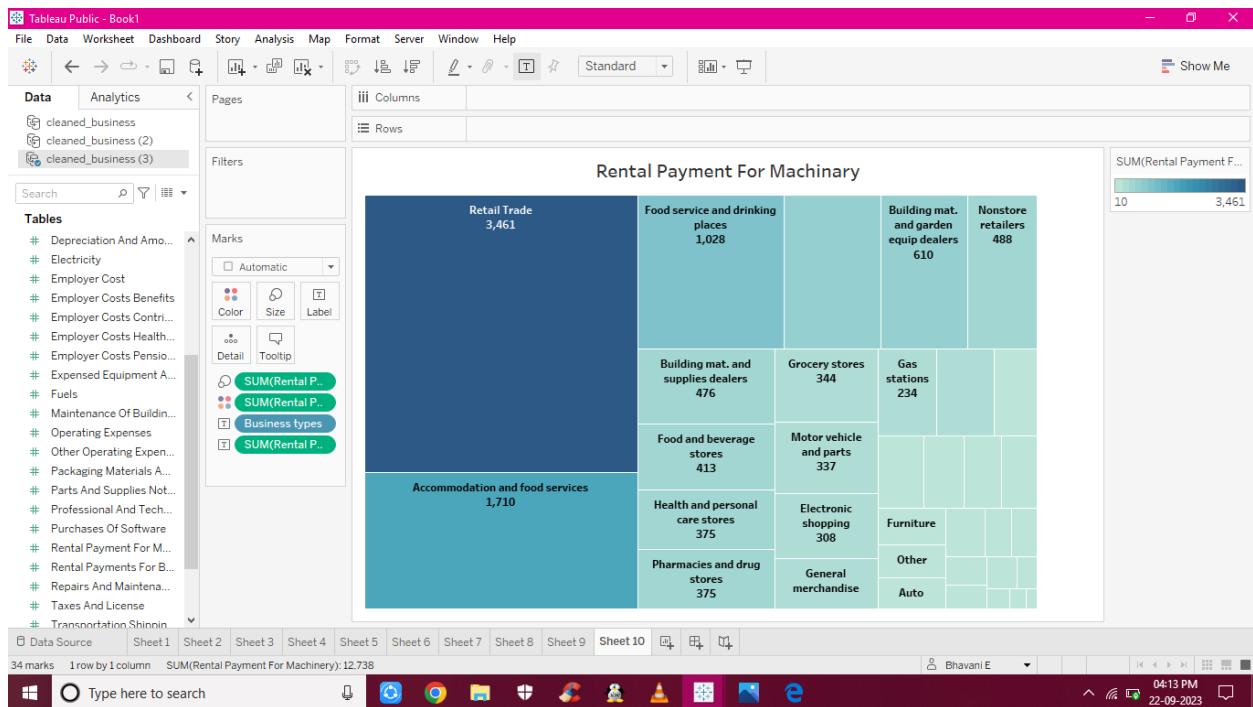
Activity 1.8: Maintenance of Buildings



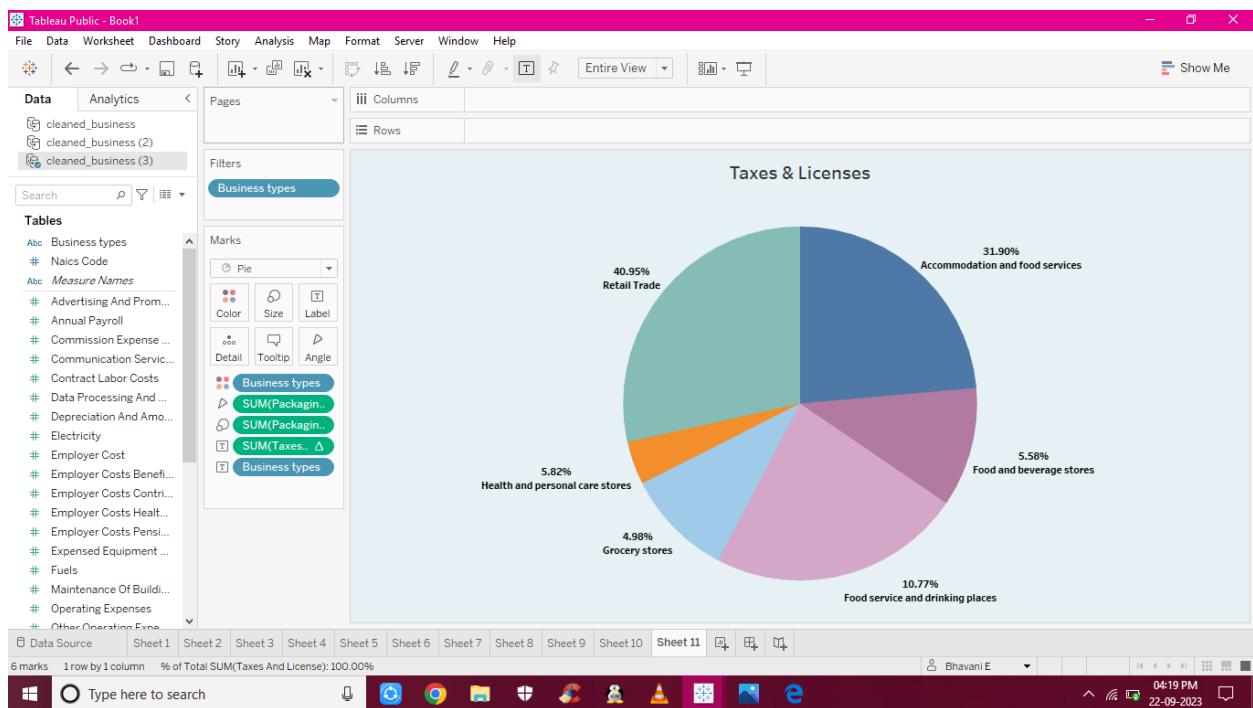
Activity 1.9: Power Expenditure



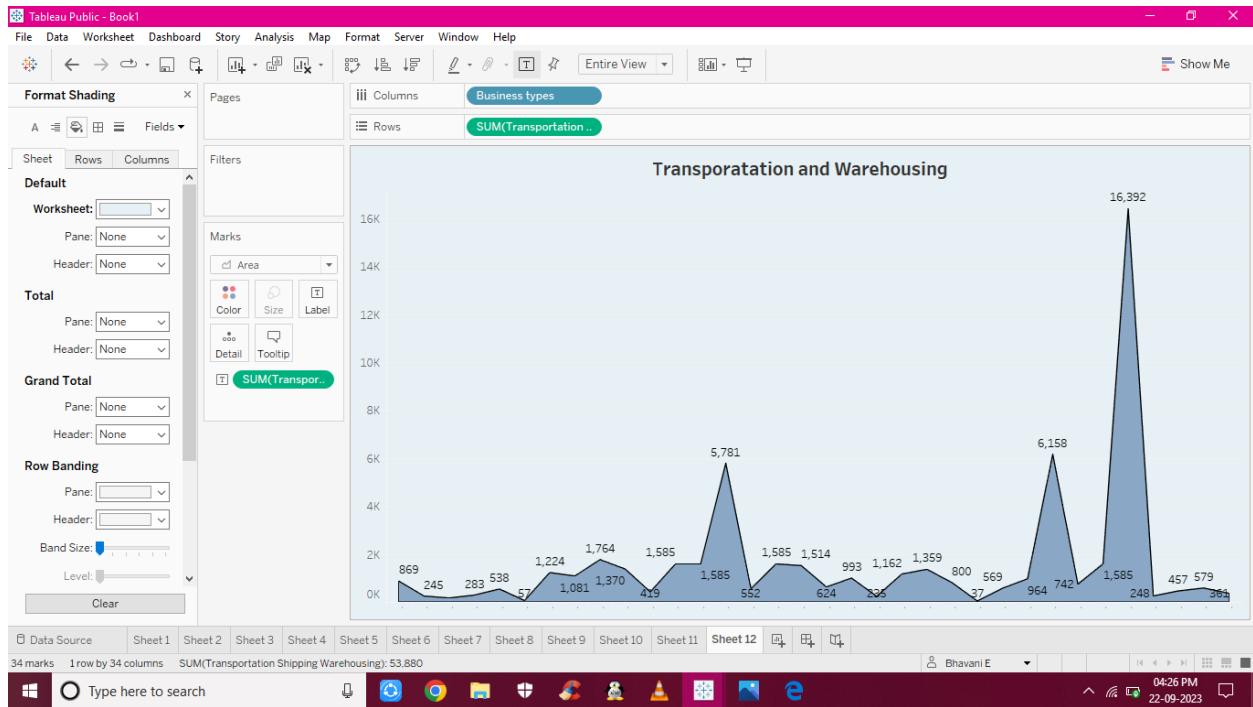
Activity 1.10: Rental Payment Machinery



Activity 1.11: Taxes & Licenses



Activity 1.12: Transportation

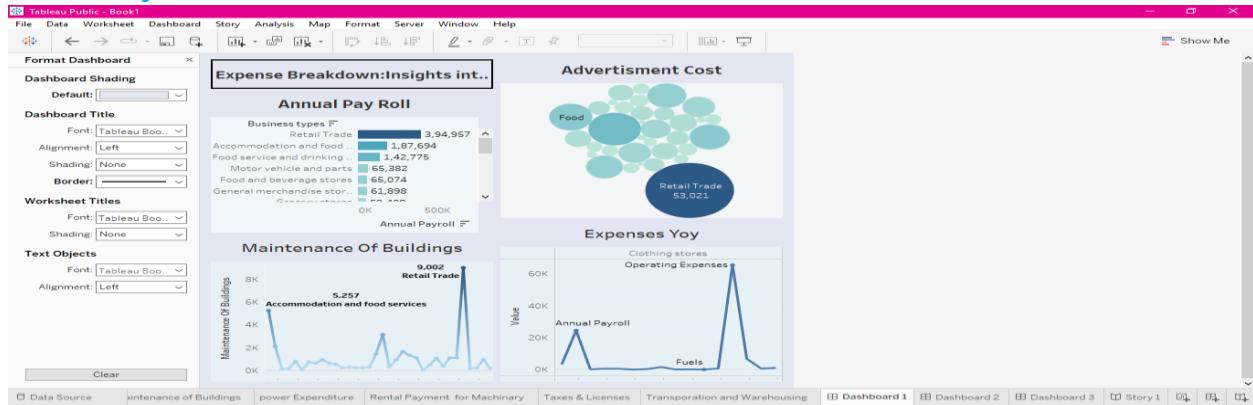


Milestone 5: Dashboard

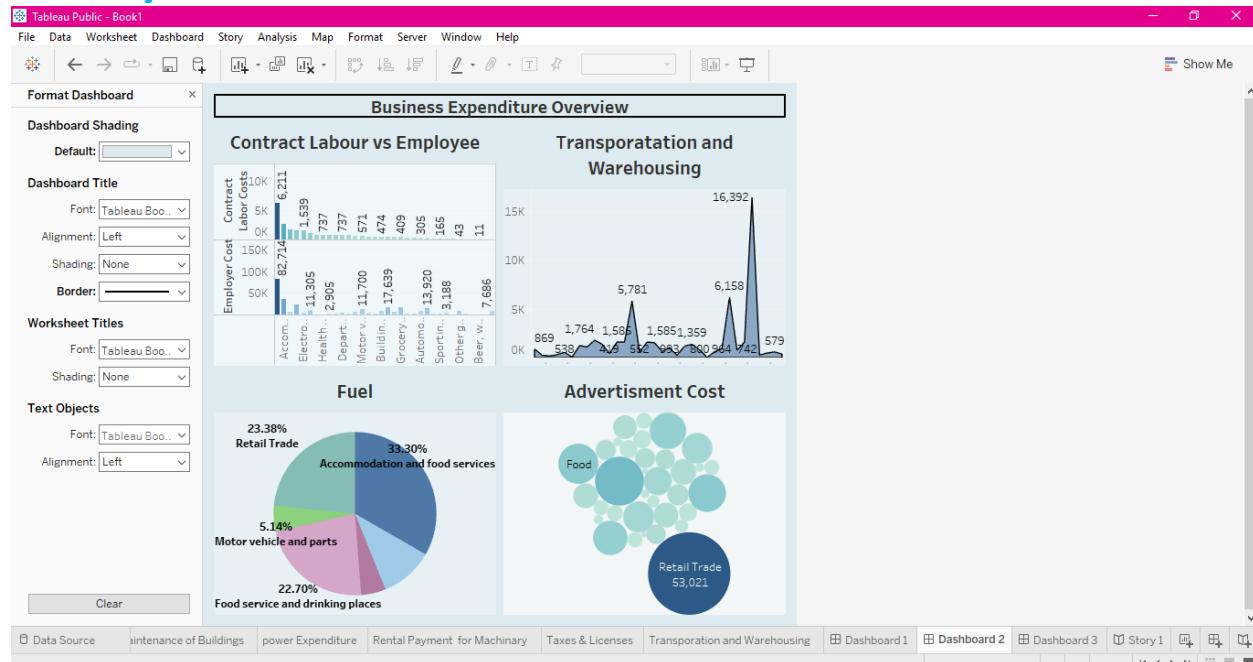
Activity 1: Responsive and Design of dashboard

Once you have created views on different sheets in Tableau, you can pull them into a dashboard.

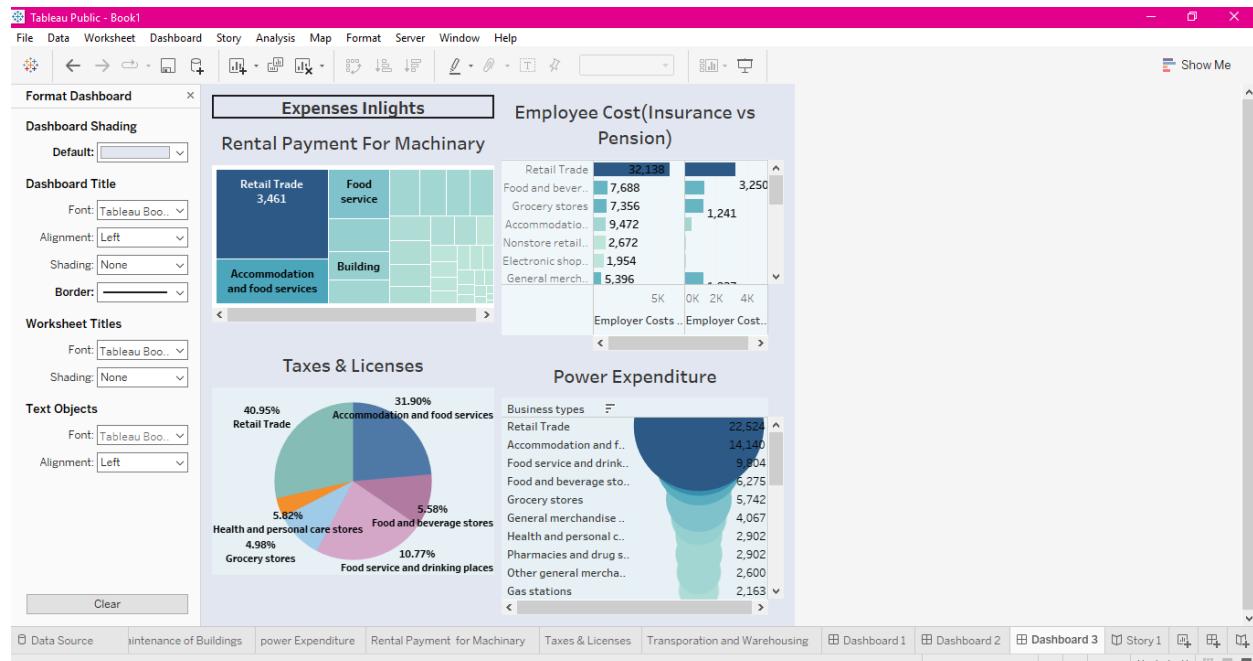
Activity 1.1: Dashboard 1



Activity 1.2: Dashboard 2



Activity 1.3: Dashboard 3

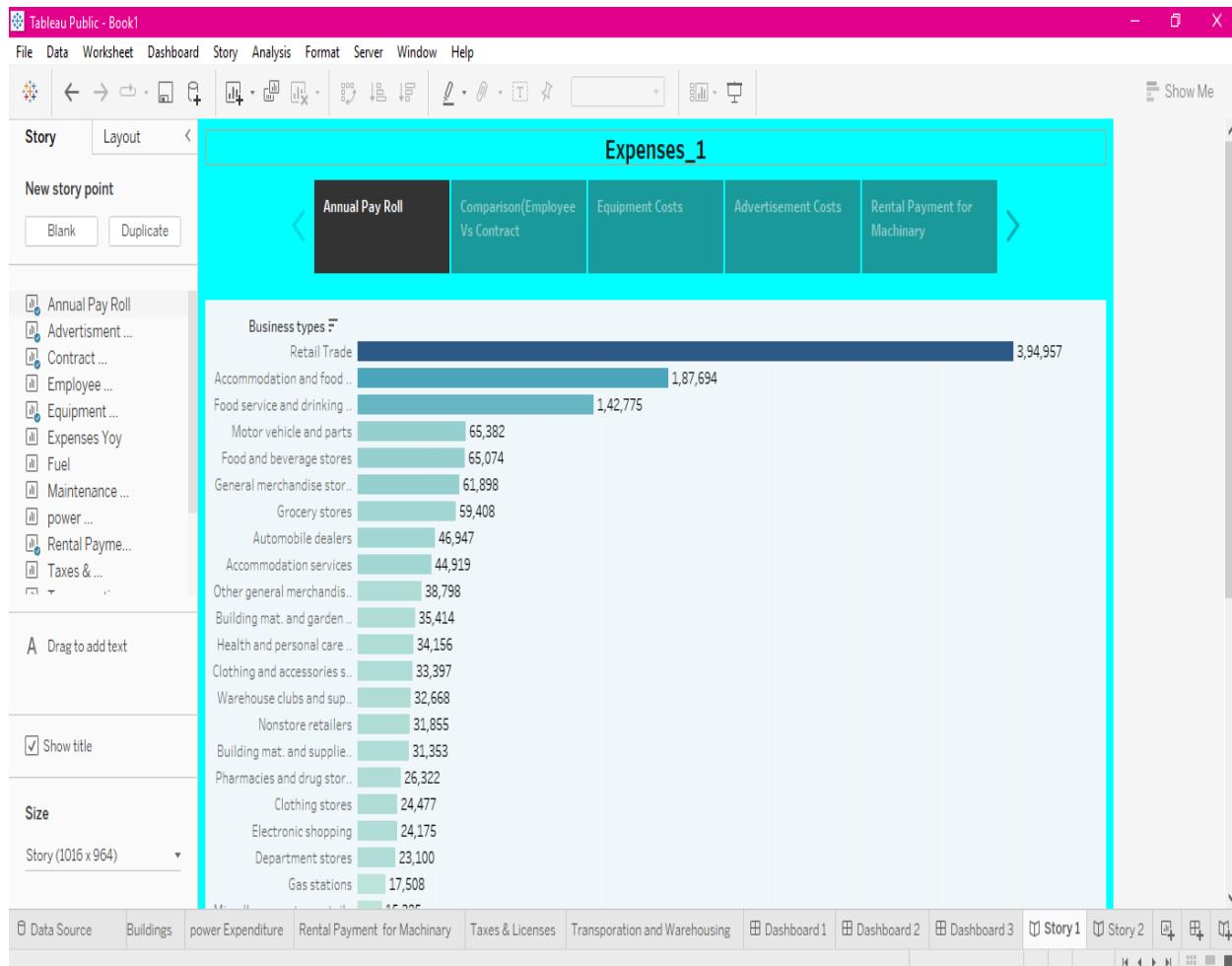


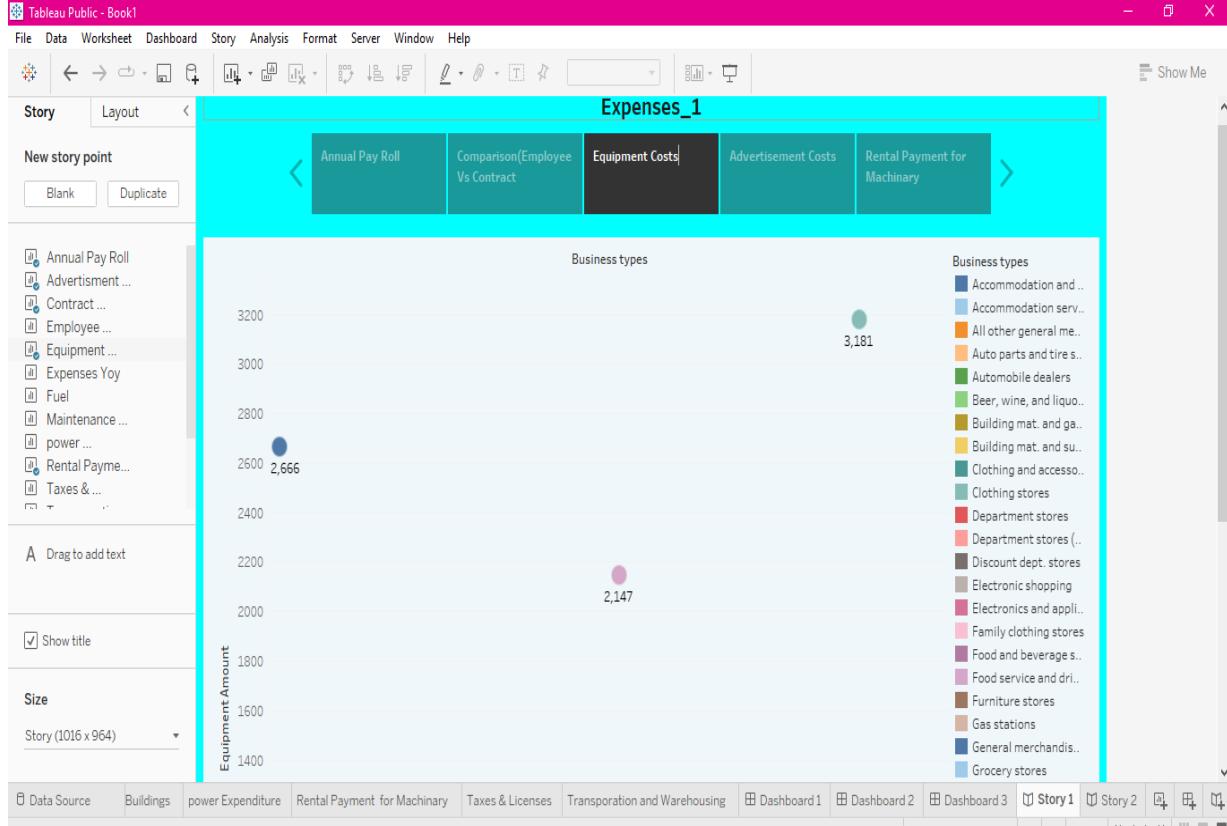
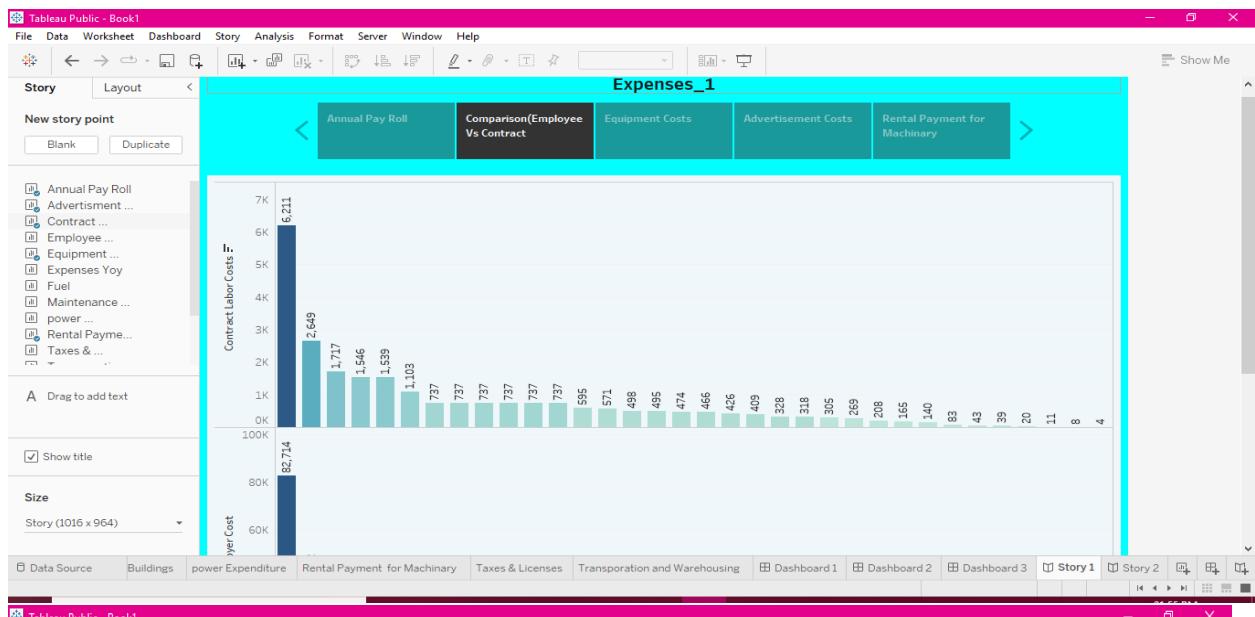
Milestone 6: Story

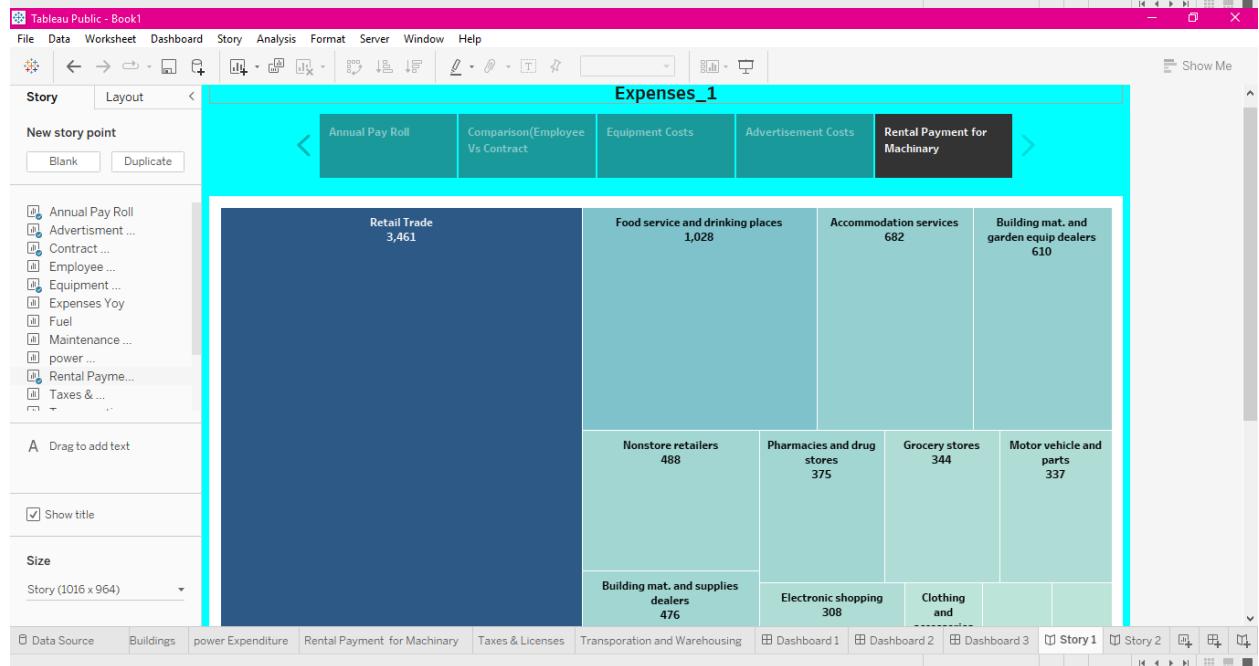
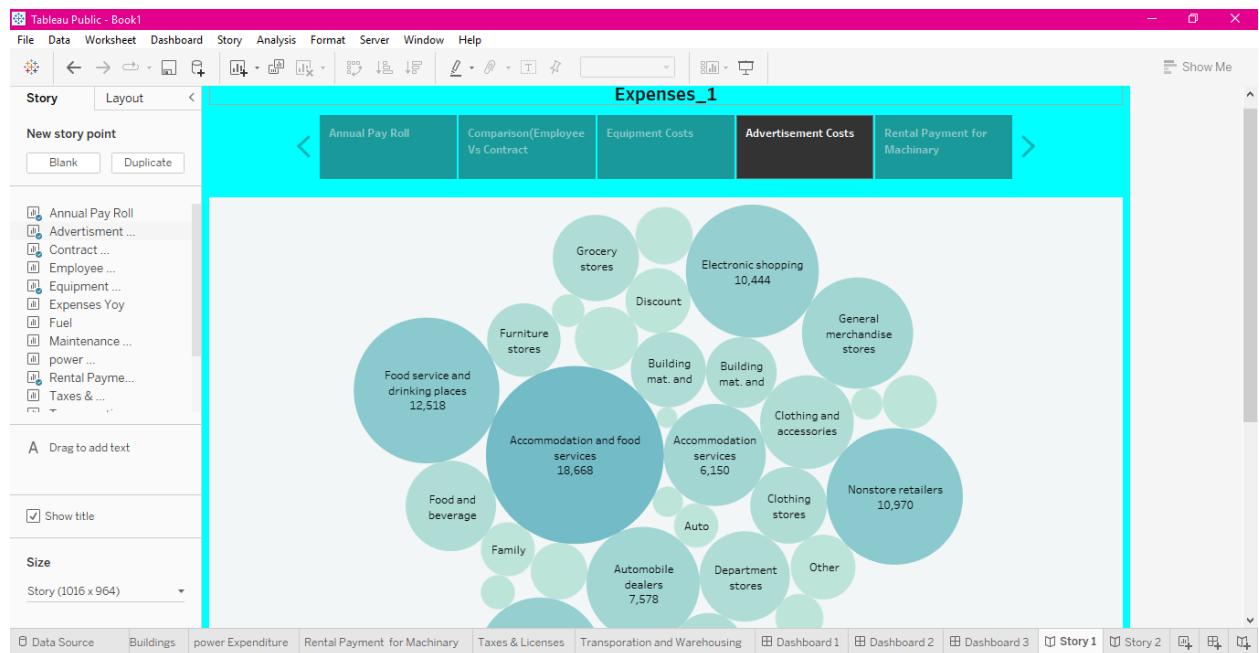
Activity 1: Number of scenes in a story

The Storyboard is a visual representation of the data analysis process and it breaks down the analysis into a series of steps or scenes.

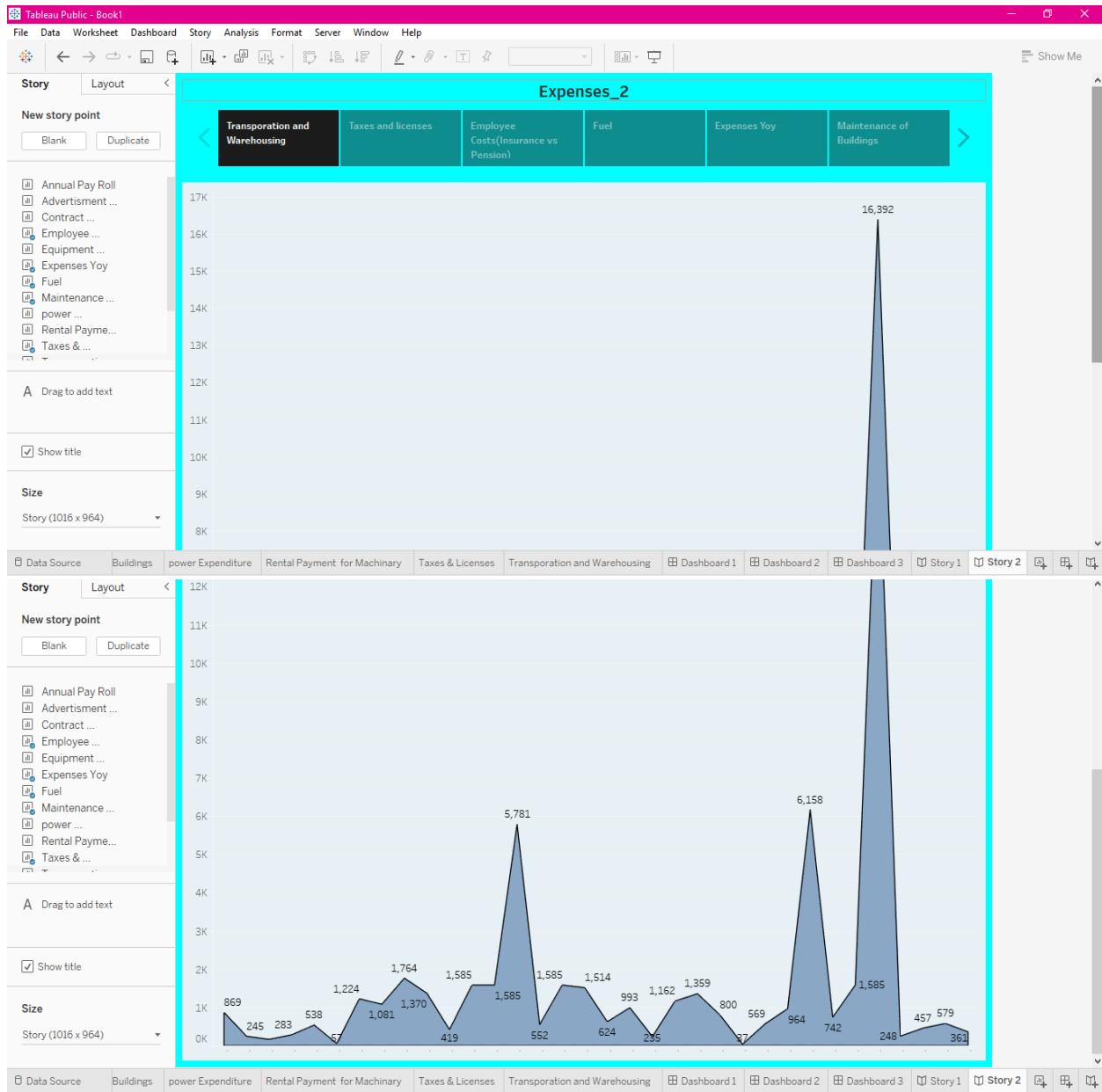
Activity 1.1: Story 1

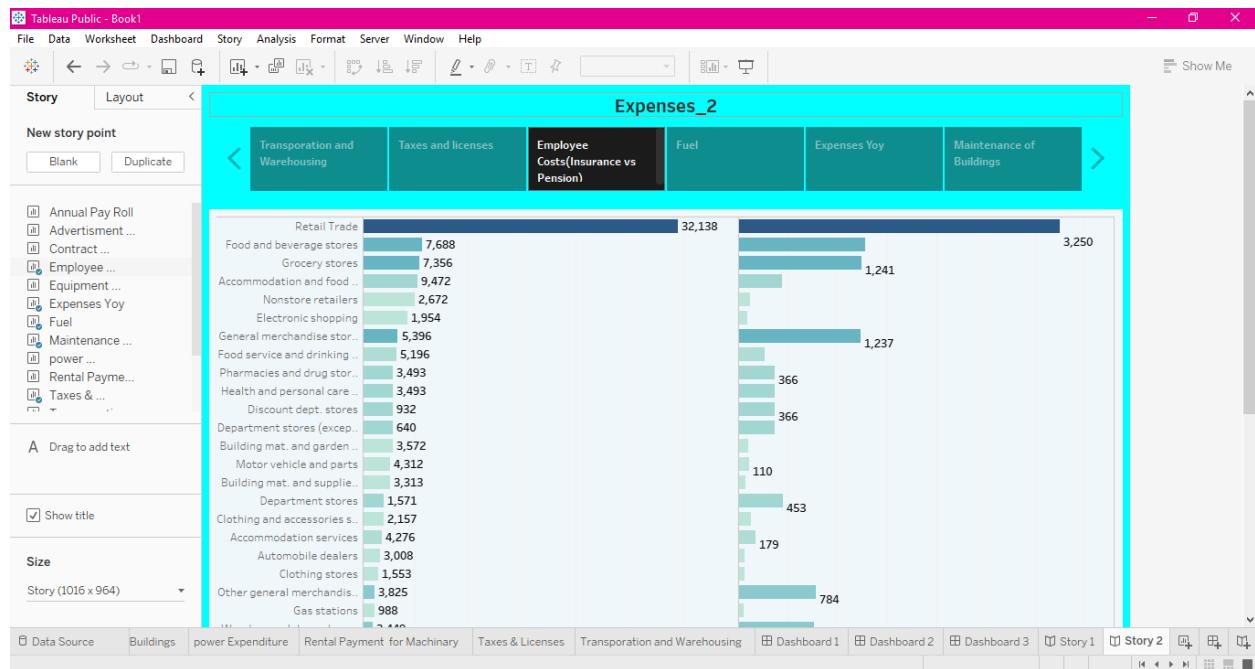
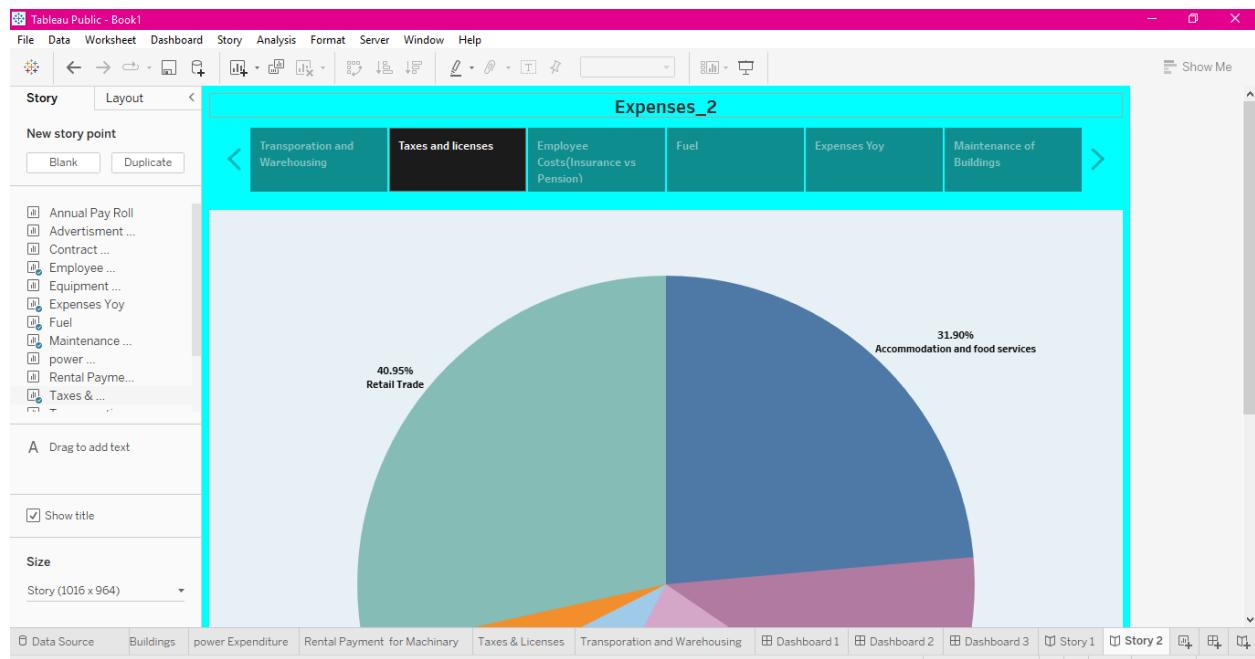


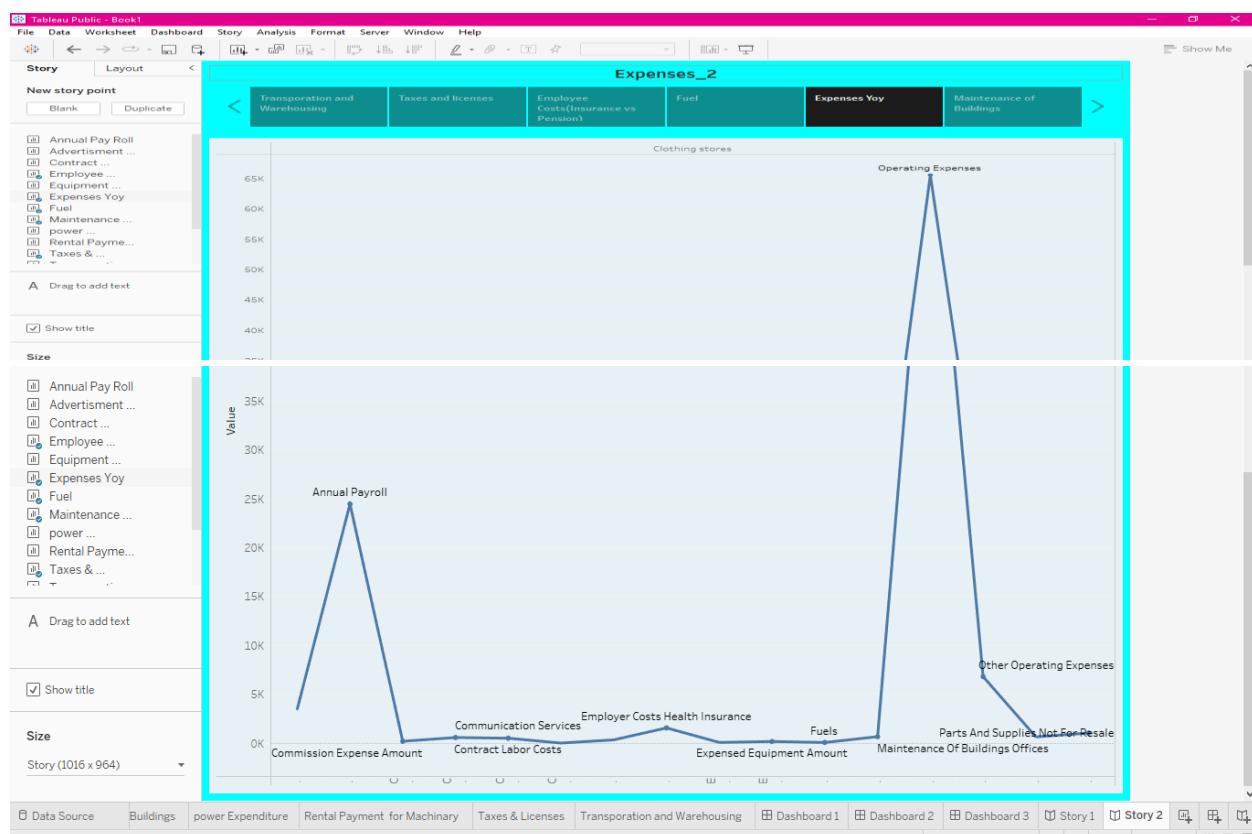
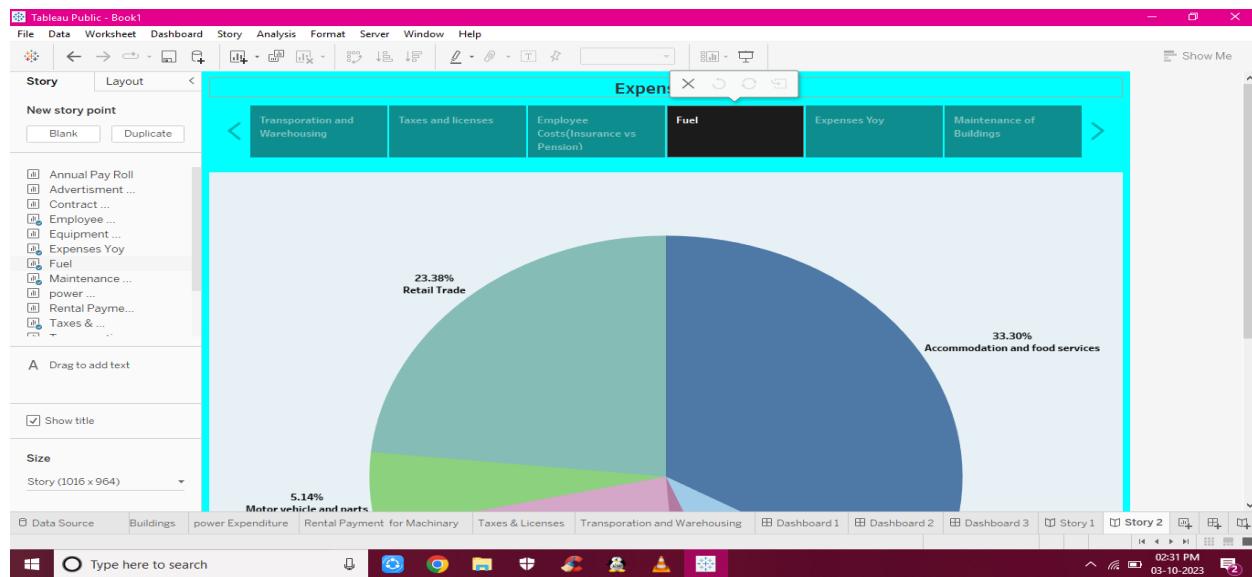


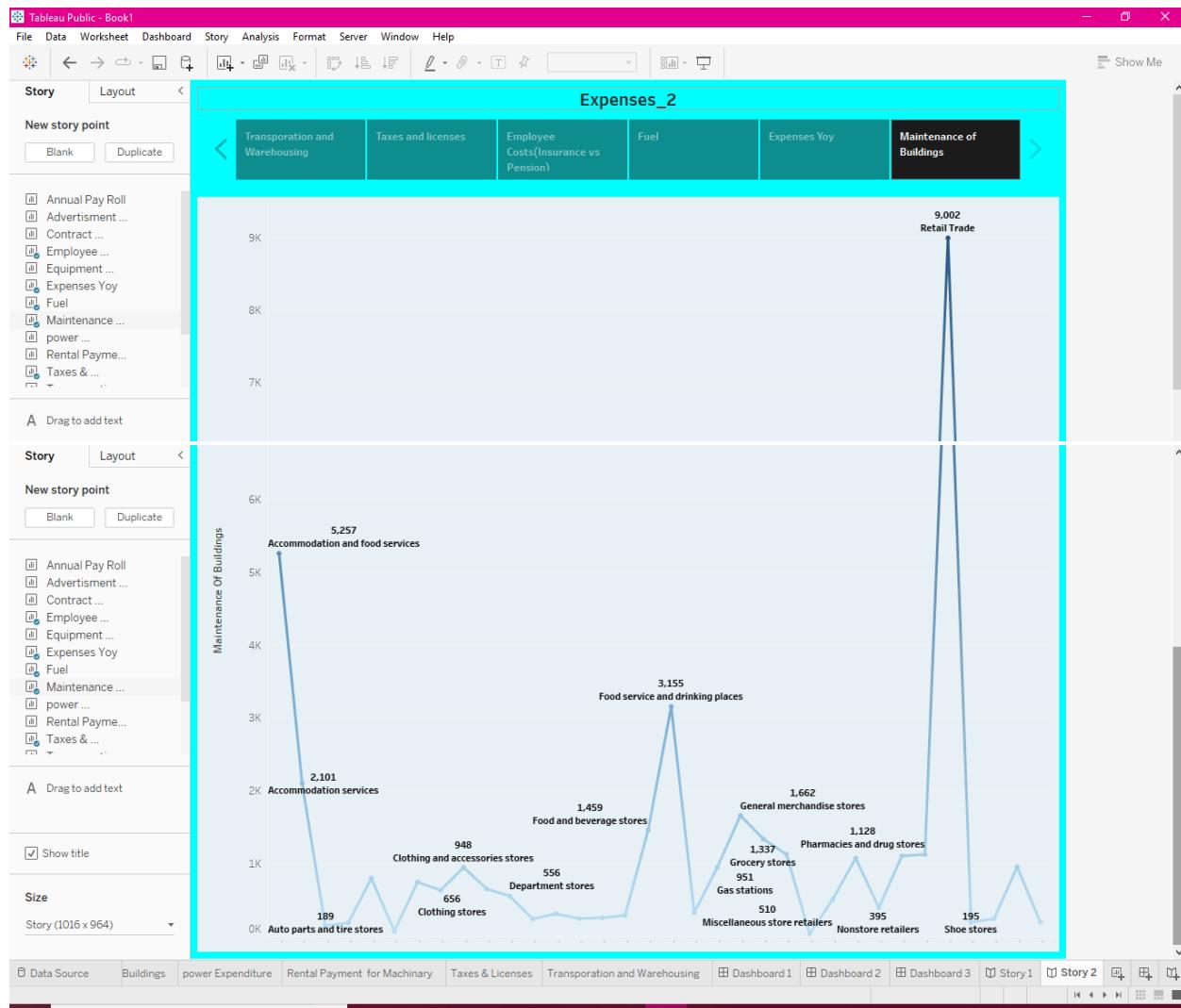


Activity 1.2: Story 2



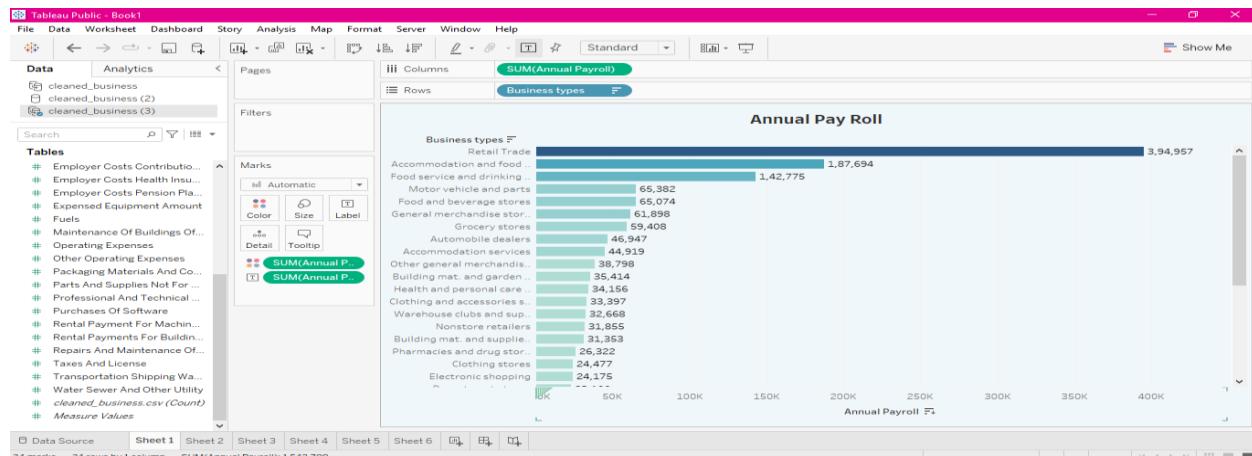


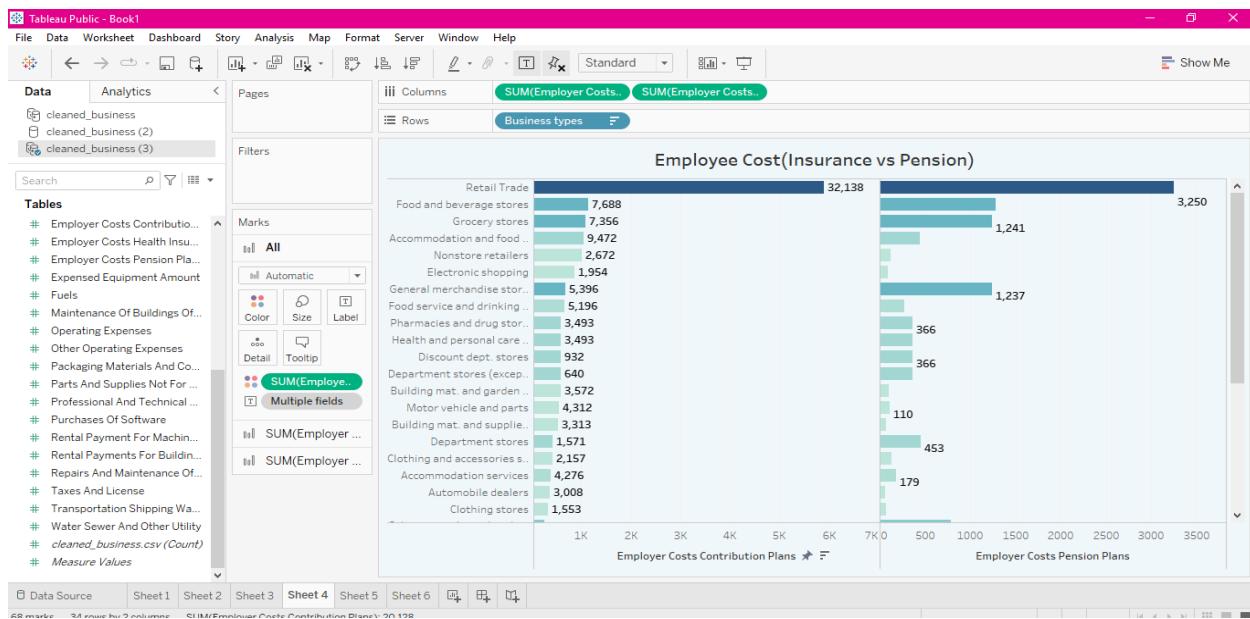
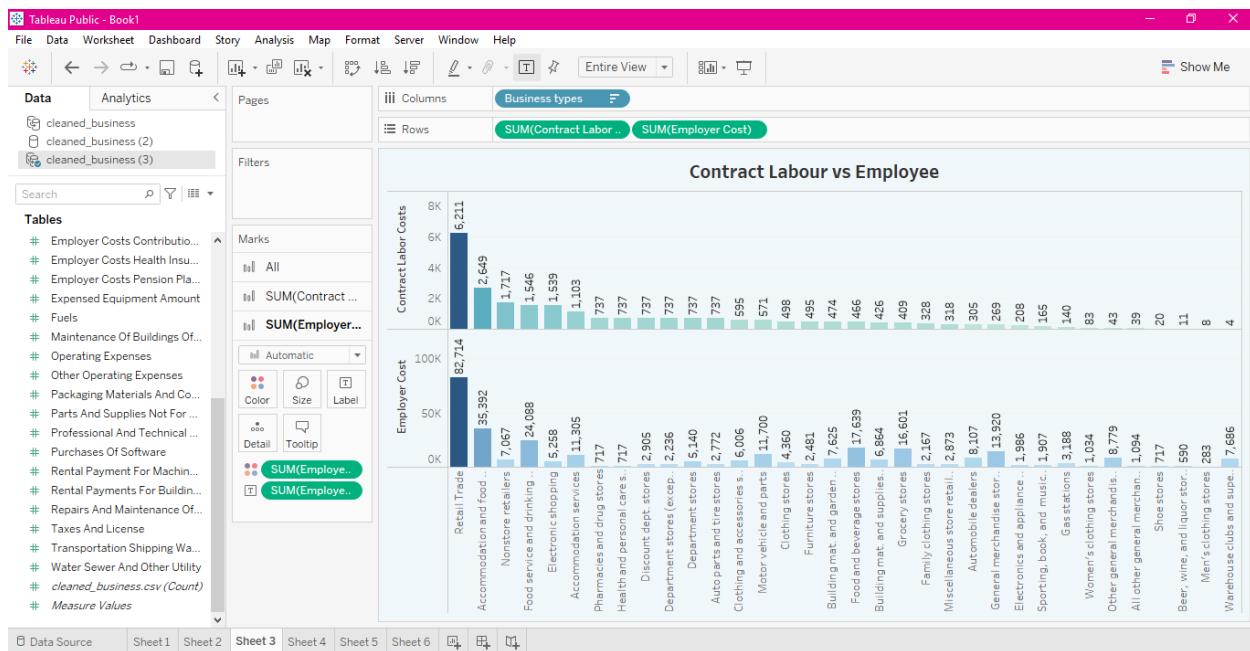




Milestone 7: Performance Testing

Activity 1: Amount of Data Rendered to Tableau





Activity 2: Number of calculation fields

The screenshot shows the Tableau Public interface with the title bar "Tableau Public - Book1". The menu bar includes "File", "Data", "Worksheet", and "Dashboard". The top navigation bar has icons for Home, Back, Forward, Refresh, and a plus sign. The "Data" tab is selected in the navigation bar. The Data pane lists three data sources: "cleaned_business" (with a warning icon), "cleaned_business (2)", and "cleaned_business (3)". Below the data sources is a search bar and a filter icon. The "Tables" section lists various measures: Business types, Naics Code, Measure Names, Advertising And Promo..., Annual Payroll, Commission Expense ..., Communication Servic..., Contract Labor Costs, Data Processing And C..., Depreciation And Amo..., Electricity, Employer Cost, Employer Costs Benefits, Employer Costs Contri..., Employer Costs Health..., Employer Costs Pensio..., Expensed Equipment A..., Fuels, Maintenance Of Buildin..., Operating Expenses, and Other Operating Expen... . At the bottom of the Data pane, it says "Data Source Annual Pay Rol", "4 marks 34 rows by 1 column SUM(A)", and a search bar placeholder "Type here to search".

Activity 3: Number of visualizations

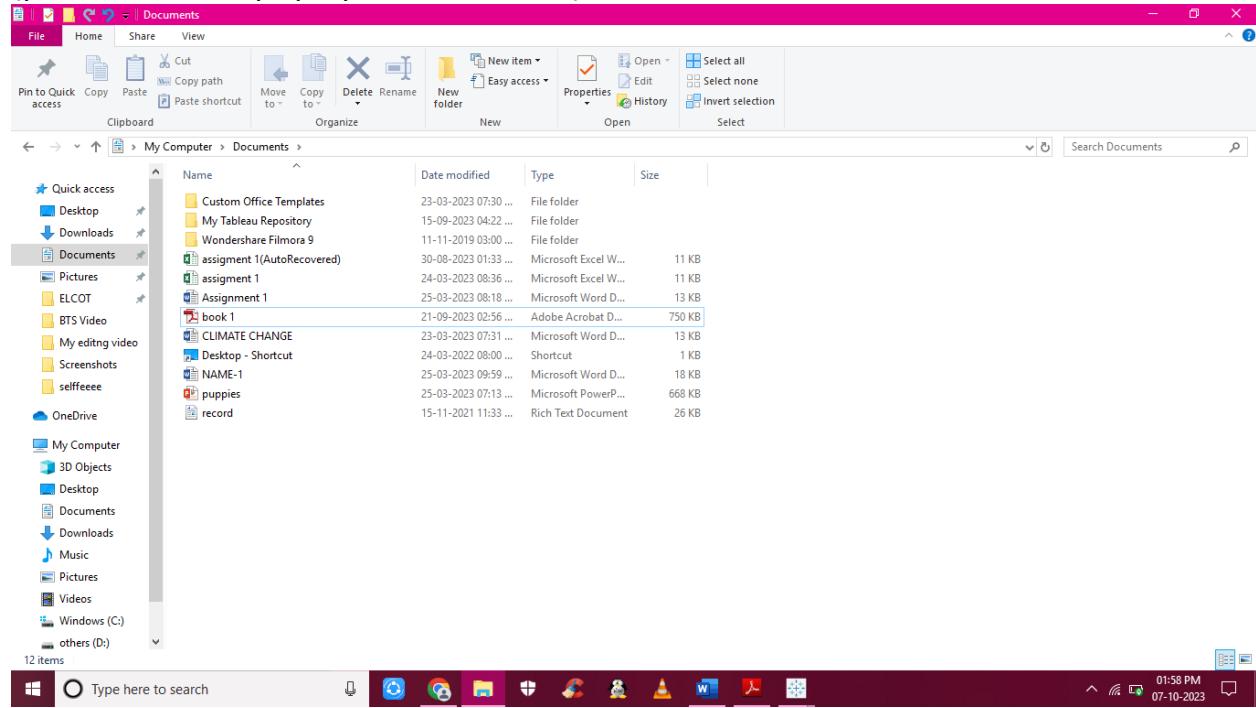
1. Annual Pay Roll
2. Advertisement Cost
3. Contract Labor vs Employee
4. Employee (Insurance vs pension)
5. Equipment Costs
6. Expenses YoY
7. Fuel
8. Maintenance of Buildings

9. Power Expenditure
10. Rental Payment Machinery
11. Taxes & Licenses
12. Transportation

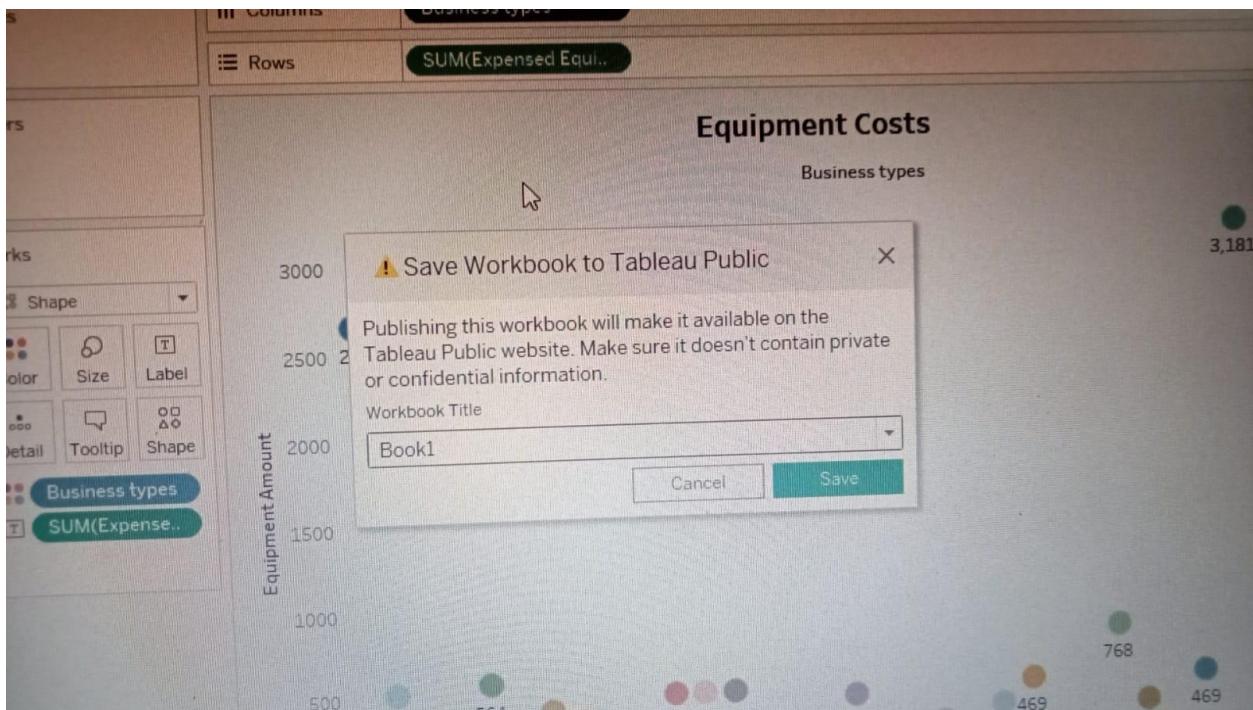
Milestone 8: Publishing

Publishing dashboard and reports to tableau public

Step 1: Go to data Source and Select Extract so that hyper extension files are created and save it at your desktop.
 (please wait for pop up of file to save)



Step 2: Go to Dashboard/story, click on share button on the top ribbon



Activity 1: Publishing dashboard and reports to tableau public

Estimation_of_business_expenses (1) (1).pdf - Adobe Reader

File Edit View Window Help

Open

Overview

Dashboard

Story

Visualizations

CostVisualizer

A. Pawshe

Overview

Home

Dashboard Stories Visualizations

3 2 12

Expense Breakdown: Insights into Diverse Business Costs

Annual Pay Roll

Category	Value
Retail Trade	384,957
Accommodation and food	187,094
Food service and drinking	142,775
Motor vehicle and parts	65,382
Food and beverage stores	65,074
General merchandise store	61,898
Grocery stores	61,408
Automobile dealers	46,947
Accommodation services	44,919
Other general merchandise	38,798
Building mat. and garden	35,414
Health and personal care	34,156
Clothing and accessories	33,397
Warehouse clubs and sup.	32,668
Nonstore retailers	31,855
Building mat. and supplies	31,353
Pharmacies and drug stores	26,322
Clothing stores	24,477
Electronic shopping	24,176
Department stores	23,100
Gas stations	17,508
Miscellaneous store retail	15,325
Auto parts and tire stores	13,857

Operating Expenses

Retail Trade: 384,957
Food service and drinking places: 142,775
Food and beverage stores: 65,074

Waiting for permission to start...

CostVisualizer

A. Pawshe

Overview

Dashboard Stories Visualizations

Story

Expenses 1

Annual Pay Roll: This bar chart illustrates the annual payroll

Comparison(Employees Vs Contract Labour): These bar charts

Equipment Cost: This bubble chart visualizes the expenditure on

Advertisement Cost: This packed bubble chart depicts the

Rental Machinery: This tree map illustrates the

Power Consumption: This heat map visualizes the power

Category	Value
Retail Trade	384,957
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Advantages:

FLEXIBLE AREAS OF CALCULATION

Cost estimation models interpret costs. Some use an array of algorithmic models to assign values to certain factors in order to compute costs. Other models include an expert judgment model and an analogy estimation.

EFFICIENCY AND COST CONTROL

Efficiency refers to the ability to do a task quickly and accurately, saving the business both time and money. When the right type of model is chosen, the business can realize gains from efficiency by using cost estimation to quickly calculate expenses and make choices on funding projects, choosing suppliers and other activities.

SUBJECTIVITY

On the downside, cost estimation is somewhat subjective. Even with algorithmic models, it is usually up to the business to weight certain values over others and assign the correct values to factors. The other model options are even more subjective. This means that sometimes a manager can make mistakes just as easily when using a cost estimation model than when working without one.

VARIABLE FACTORS

In a perfect world, factors remain steady and cost estimation models always produce accurate results. Unfortunately, markets are in constant flux, prices change and technology is always moving onward. This leads to constant changes in price, which means that costs have to be frequently updated and values

changed to match. This can be a drain on time, especially in highly complex models.

Disadvantages:

- It is costly to use as it involves experts.
- It is not effective for controlling many types of overhead costs.
- It is not easy to apply in non-manufacturing activities since relationship between cost and output cannot be determined.
- The estimate cannot communicate between labor and supervisor.
- Changing the method of estimation does not maintain the quality of the material.

Future scope:

Cost estimation in project management is the process of forecasting the financial and other resources needed to complete a project within a defined scope.

Cost estimation accounts for each element required for the project from materials to labor and calculates a total amount that determines a projects budget.