PROJECT REPORT

1. INTRODUCTION

Estimation is the scientific way of working out the approximate cost of an engineering project before execution of the work. It is totally different from calculation of the exact cost after completion of the project.

Cost estimation requires a thorough Knowledge of the construction procedures and cost of materials & labour in addition to the skill, experience, foresight and good judgment.

1.1 OVERWISE

This report deal's 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 employed Tableau tool.

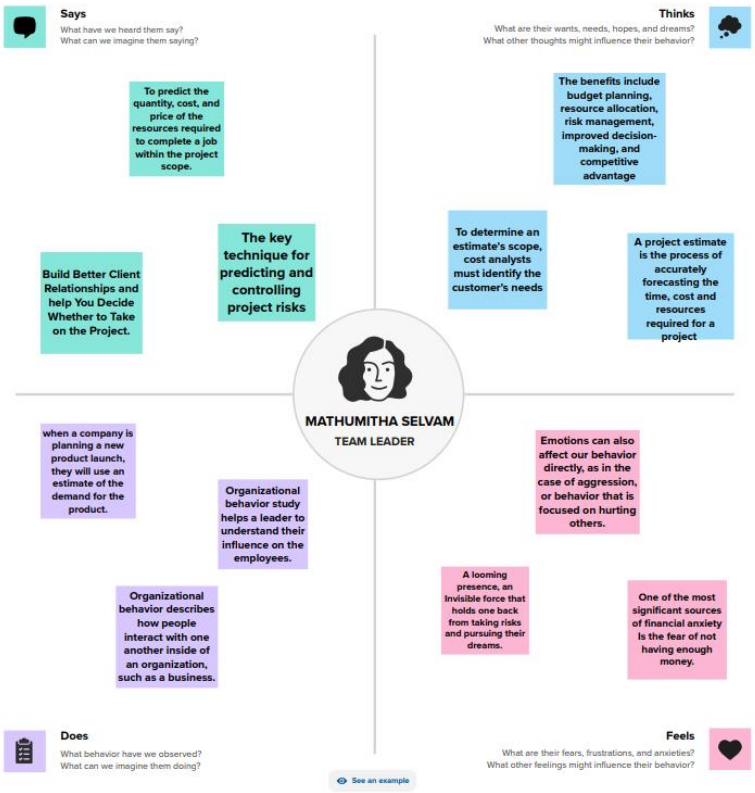
1.2 PURPOSE

The primary business requirements for this report are to visualize and analysed business expenses, provide industry-specific insights, identify cost drivers, highlight outliers, and offer interactive functionality. Stakeholders need a visual representation of expenses to compare and analyse spending patterns across different businesses and industries. The report should facilitate the identification of key cost drivers, enabling stakeholders to understand the primary factors contributing to expenses.

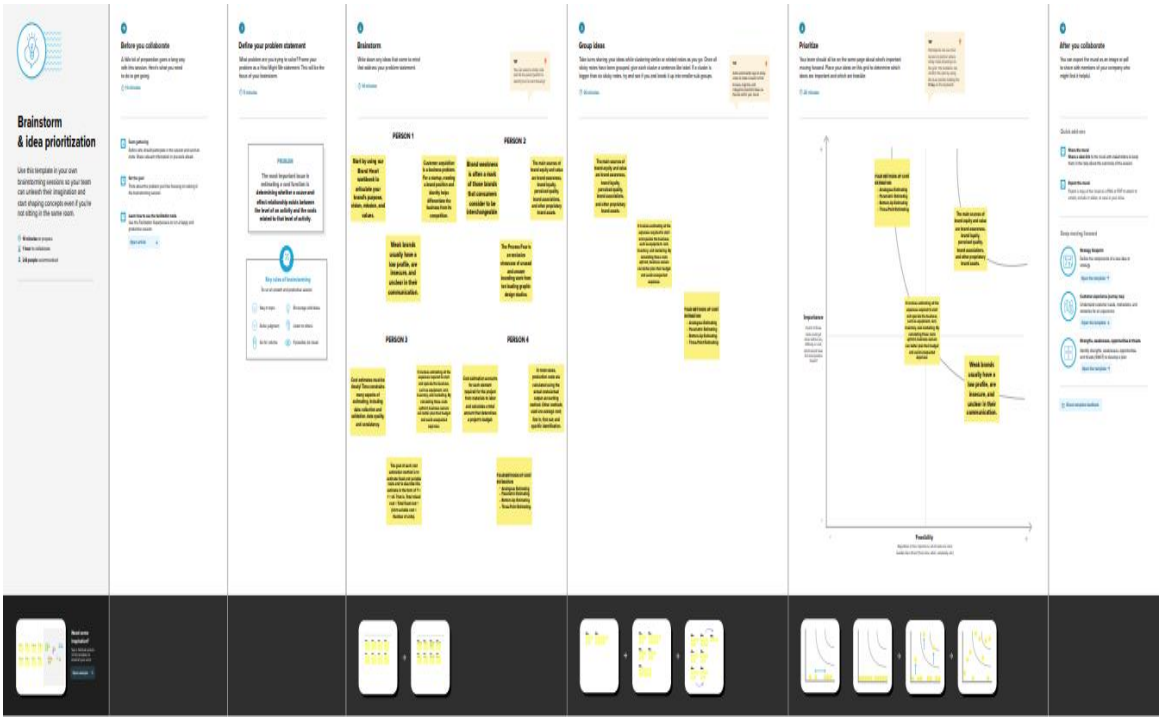
A literature survey for Business Expenses involves reviewing academic articles, books, and other sources related to the related industry including statistical, economic, financial models. It also discusses various factors that affect expenses etc. The survey can provide a comprehensive understanding of the significance, challenges, and opportunities associated with the industry.

2. PROBLEMS DEFINITION & DESIGN THINKING

2.1 EMPATHY MAP

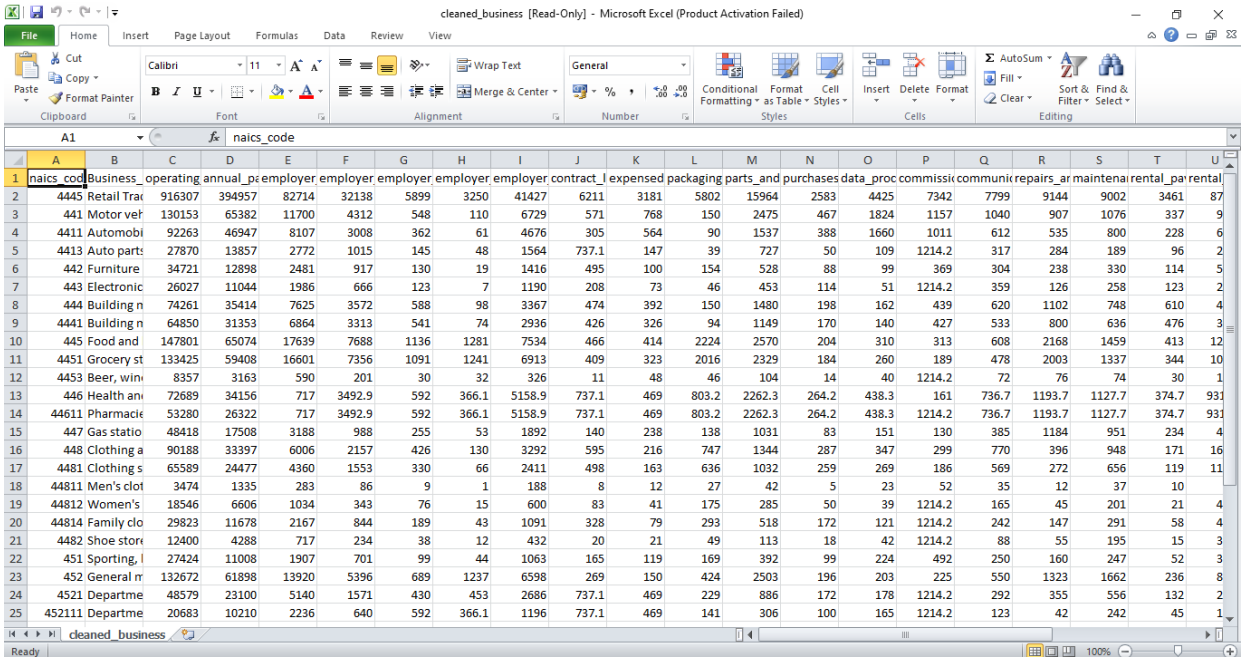


2.2 IDEATION & BRAINSTORMING MAP



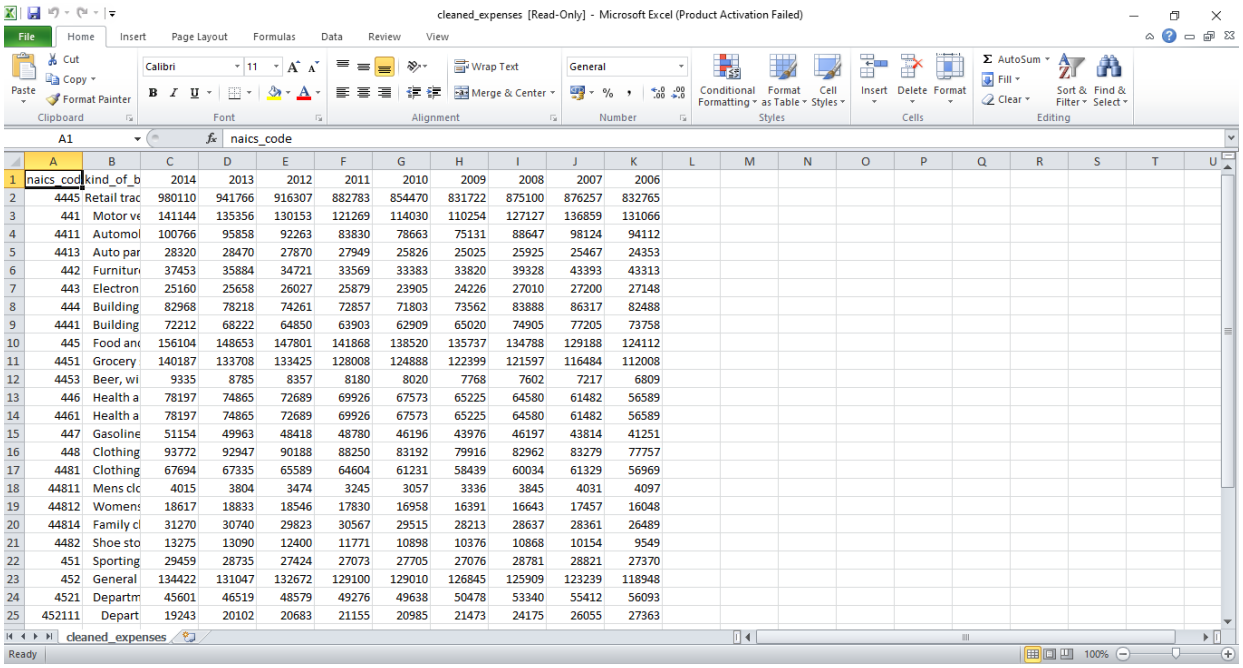
3. DATA SET

3.1 CLEANED BUSINESS



naics_cod	Business_	operating	annual_pa	employer	employer	employer	employer	employer	contract_l	expensed	packaging	parts_and	purchases	data_proc	commissi	communi	repairs_ar	maintenar	rental_pa	rental
4445	Retail Trac	916307	394957	82714	32138	5899	3250	41427	6211	3181	5802	15964	2583	4425	7342	7799	9144	9002	3461	87
441	Motor veh	130153	65382	11700	4312	548	110	6729	571	768	150	2475	467	1824	1157	1040	907	1076	337	9
4411	Automobi	92263	46947	8107	3008	362	61	4676	305	564	90	1537	388	1660	1011	612	535	800	228	6
4413	Auto parts	27870	13857	2772	1015	145	48	1564	737.1	147	39	727	50	109	1214.2	317	284	189	96	2
442	Furniture	34721	12898	2481	917	130	19	1416	495	100	154	528	88	99	369	304	238	330	114	5
443	Electronic	26027	11044	1986	666	123	7	1190	208	73	46	453	114	51	1214.2	359	126	258	123	2
444	Building n	74261	35414	7625	3572	588	98	3367	474	392	150	1480	198	162	439	620	1102	748	610	4
4441	Building n	64850	31353	6864	3313	541	74	2936	426	326	94	1149	170	140	427	533	800	636	476	3
445	Food and	147801	65074	17639	7688	1136	1281	7534	466	414	2224	2570	204	310	313	608	2168	1459	413	12
4451	Grocery st	133425	59408	16601	7356	1091	1241	6913	409	323	2016	2329	184	260	189	478	2003	1337	344	10
4453	Beer, win	8357	3163	590	201	30	32	326	11	48	46	104	14	40	1214.2	72	76	74	30	1
446	Health an	72689	34156	717	3492.9	592	366.1	5158.9	737.1	469	803.2	2262.3	264.2	438.3	161	736.7	1193.7	1127.7	374.7	931
44611	Pharmacie	53280	26322	717	3492.9	592	366.1	5158.9	737.1	469	803.2	2262.3	264.2	438.3	1214.2	736.7	1193.7	1127.7	374.7	931
447	Gas statio	48418	17508	3188	988	255	53	1892	140	238	138	1031	83	151	130	385	1184	951	234	4
448	Clothing a	90188	33397	6006	2157	426	130	3292	595	216	747	1344	287	347	299	770	396	948	171	16
4481	Clothing s	65589	24477	4360	1553	330	66	2411	498	163	636	1032	259	269	186	569	272	656	119	11
44811	Men's clot	3474	1335	283	86	9	1	188	8	12	27	42	5	23	52	35	12	37	10	
44812	Women's	18546	6606	1034	343	76	15	600	83	41	175	285	50	39	1214.2	165	45	201	21	4
44814	Family clo	29823	11678	2167	844	189	43	1091	328	79	293	518	172	121	1214.2	242	147	291	58	4
4482	Shoe store	12400	4288	717	234	38	12	432	20	21	49	113	18	42	1214.2	88	55	195	15	3
451	Sporting, l	27424	11008	1907	701	99	44	1063	165	119	169	392	99	224	492	250	160	247	52	3
452	General m	132672	61898	13920	5396	689	1237	6598	269	150	424	2503	196	203	225	550	1323	1662	236	8
4521	Departme	48579	23100	5140	1571	430	453	2686	737.1	469	229	886	172	178	1214.2	292	355	556	132	2
452111	Departme	20683	10210	2236	640	592	366.1	1196	737.1	469	141	306	100	165	1214.2	123	42	242	45	1

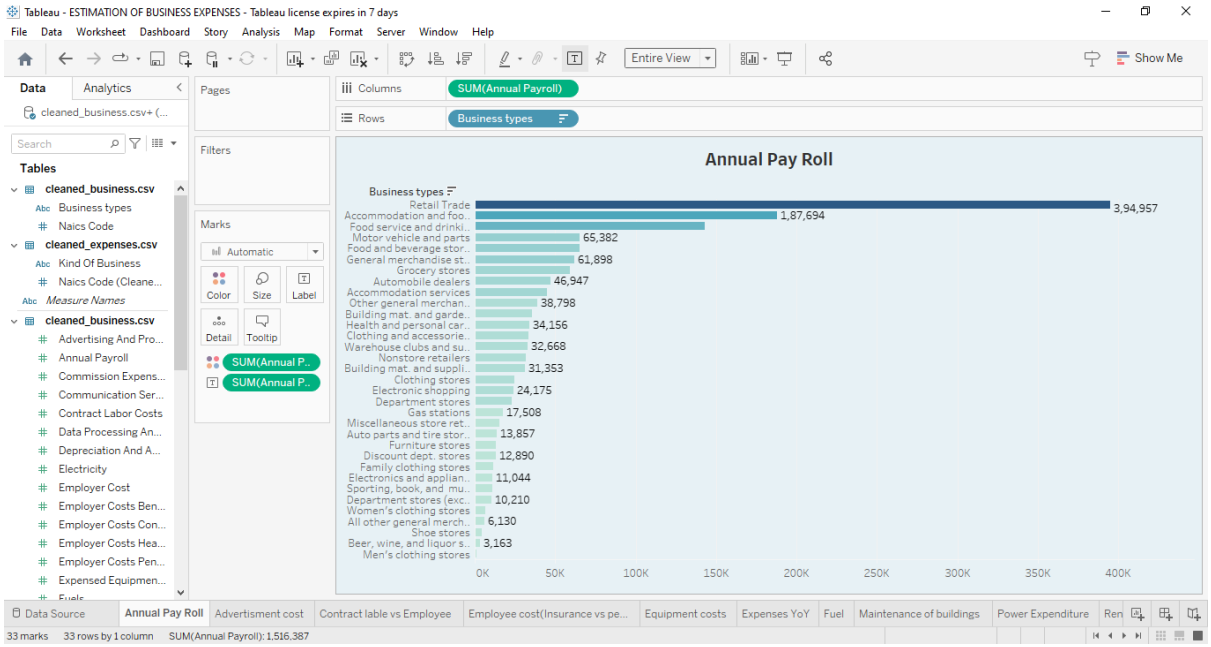
3.2 CLEANED EXPENSES



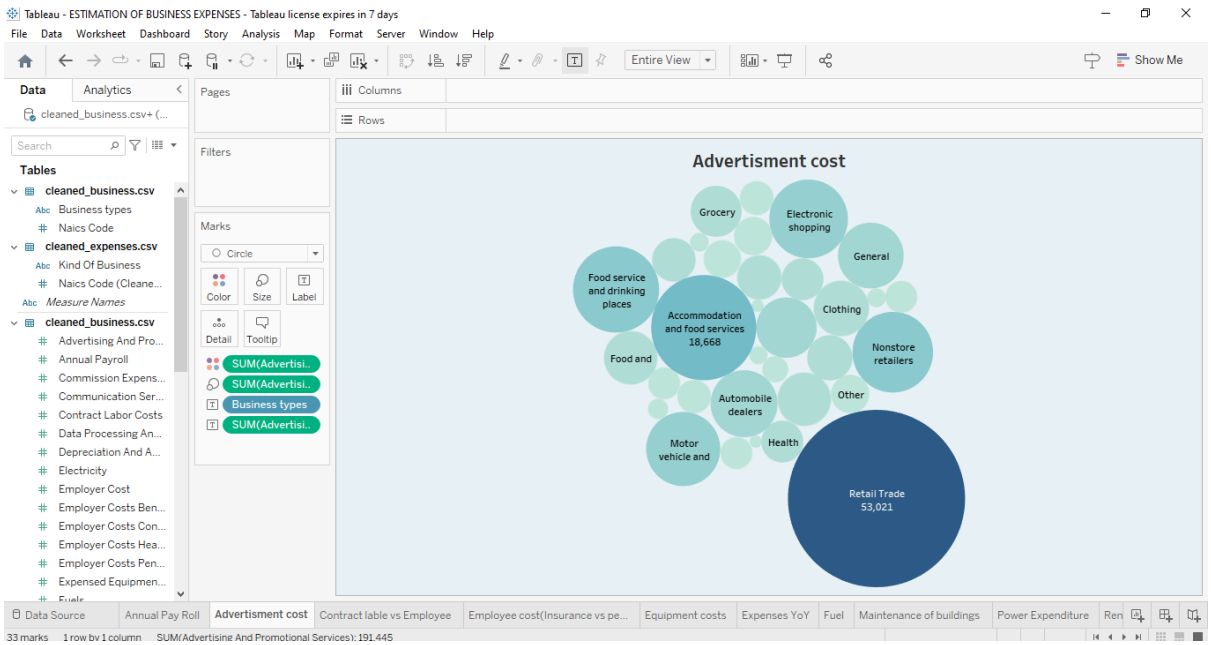
naics_cod	kind_of_b	2014	2013	2012	2011	2010	2009	2008	2007	2006
4445	Retail trac	980110	941766	916307	882783	854470	831722	875100	876257	832765
441	Motor ve	141144	135356	130153	121269	114030	110254	127127	136859	131066
4411	Automol	100766	95858	92263	83830	78663	75131	88647	98124	94112
4413	Auto par	28320	28470	27870	27949	25826	25025	25925	25467	24353
442	Furnitur	37453	35884	34721	33569	33383	33820	39328	43393	43313
443	Electron	25160	25658	26027	25879	23905	24226	27010	27200	27148
444	Building	82968	78218	74261	72857	71803	73562	83888	86317	82488
4441	Building	72212	68222	64850	63903	62909	65020	74905	77205	73758
445	Food an	156104	148653	147801	141868	138520	135737	134788	129188	124112
4451	Grocery	140187	133708	133425	128008	124888	122399	121597	116484	112008
4453	Beer, wi	9335	8785	8357	8180	8020	7768	7602	7217	6809
446	Health a	78197	74865	72689	69926	67573	65225	64580	61482	56589
4461	Health a	78197	74865	72689	69926	67573	65225	64580	61482	56589
447	Gasoline	51154	49963	48418	48780	46196	43976	46197	43814	41251
448	Clothing	93772	92947	90188	88250	83192	79916	82962	83279	77757
4481	Clothing	67694	67335	65589	64604	61231	58439	60034	61329	56969
44811	Mens clo	4015	3804	3474	3245	3057	3336	3845	4031	4097
44812	Womens	18617	18833	18546	17830	16958	16391	16643	17457	16048
44814	Family cl	31270	30740	29823	30567	29515	28213	28637	28361	26489
4482	Shoe sto	13275	13090	12400	11771	10898	10376	10868	10154	9549
451	Sporting	29459	28735	27424	27073	27705	27076	28781	28821	27370
452	General	134422	131047	132672	129100	129010	126845	125909	123239	118948
4521	Departm	45601	46519	48579	49276	49638	50478	53340	55412	56093
452111	Depart	19243	20102	20683	21155	20985	21473	24175	26055	27363

4. VISUALIZATIONS

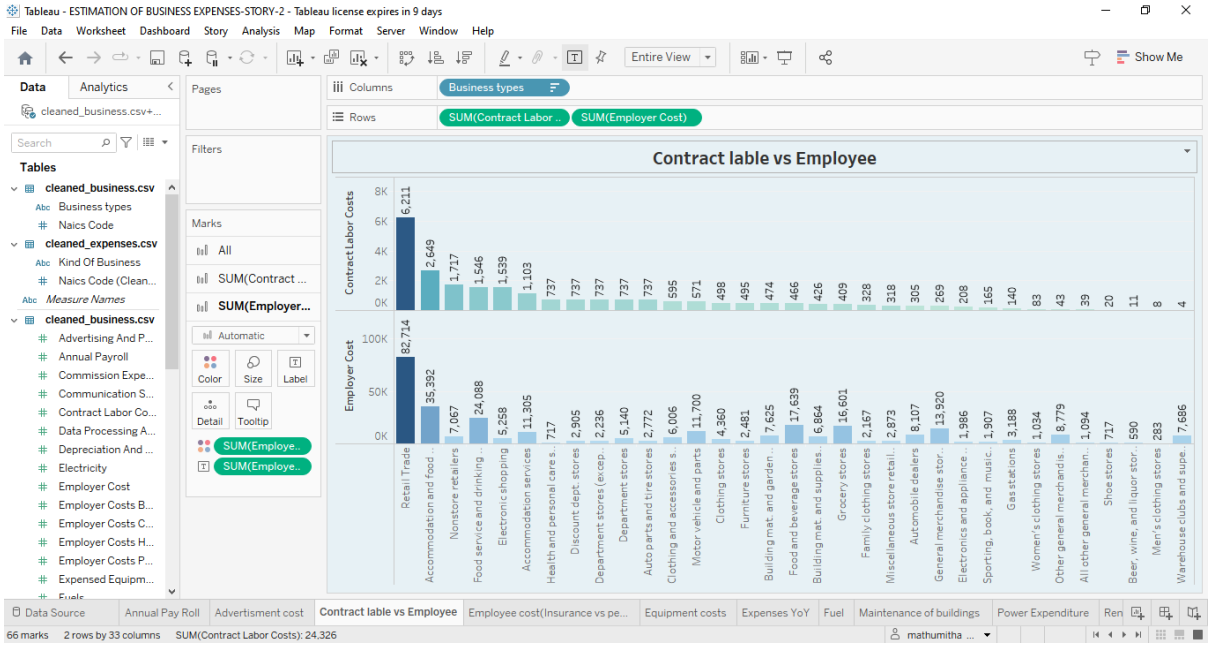
4.1 ANNUAL PAYROLL



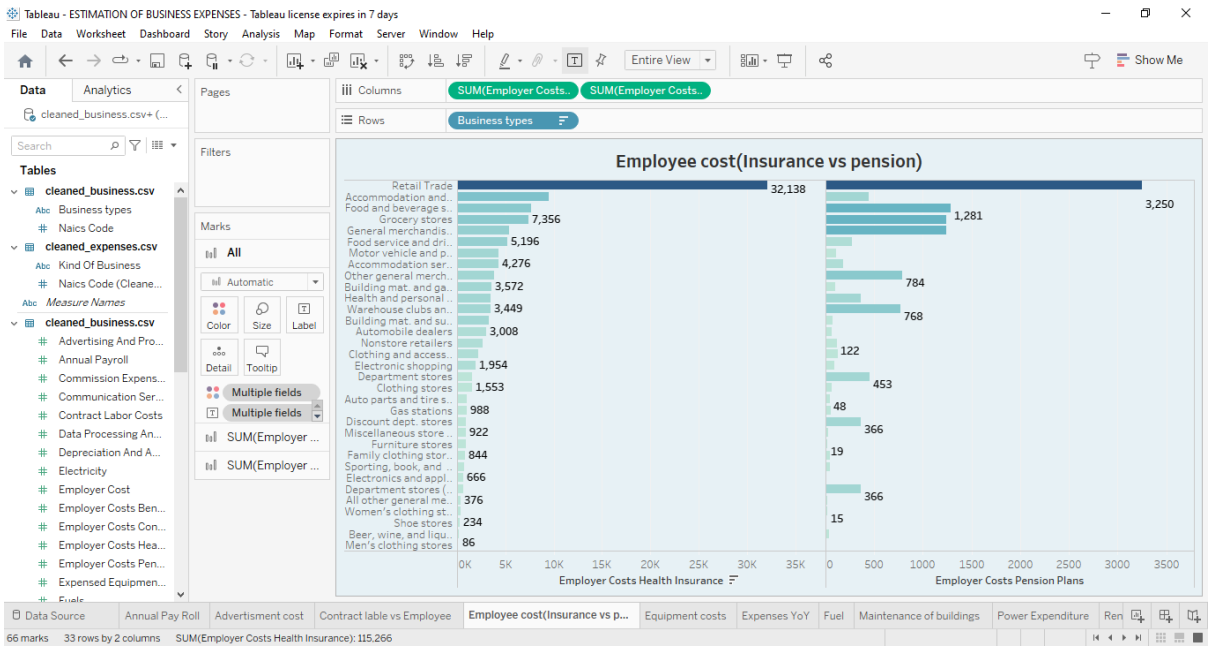
4.2 ADVERTISMENT COST



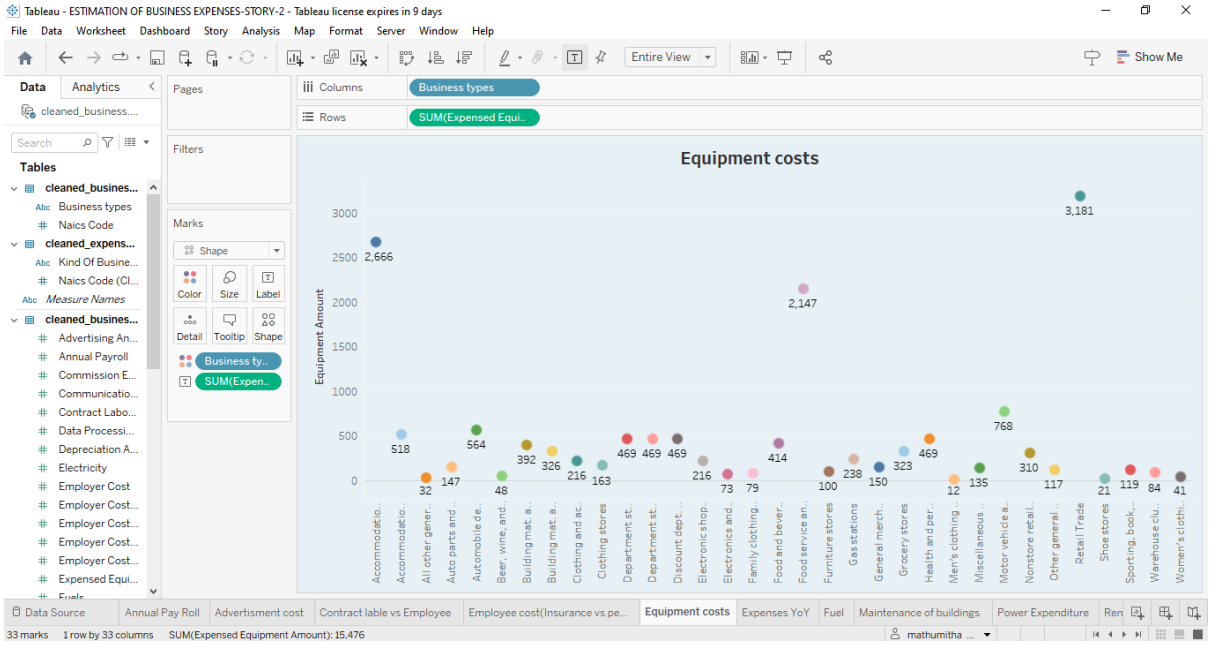
4.3 CONTRACT LABOUR VS EMPLOYEES



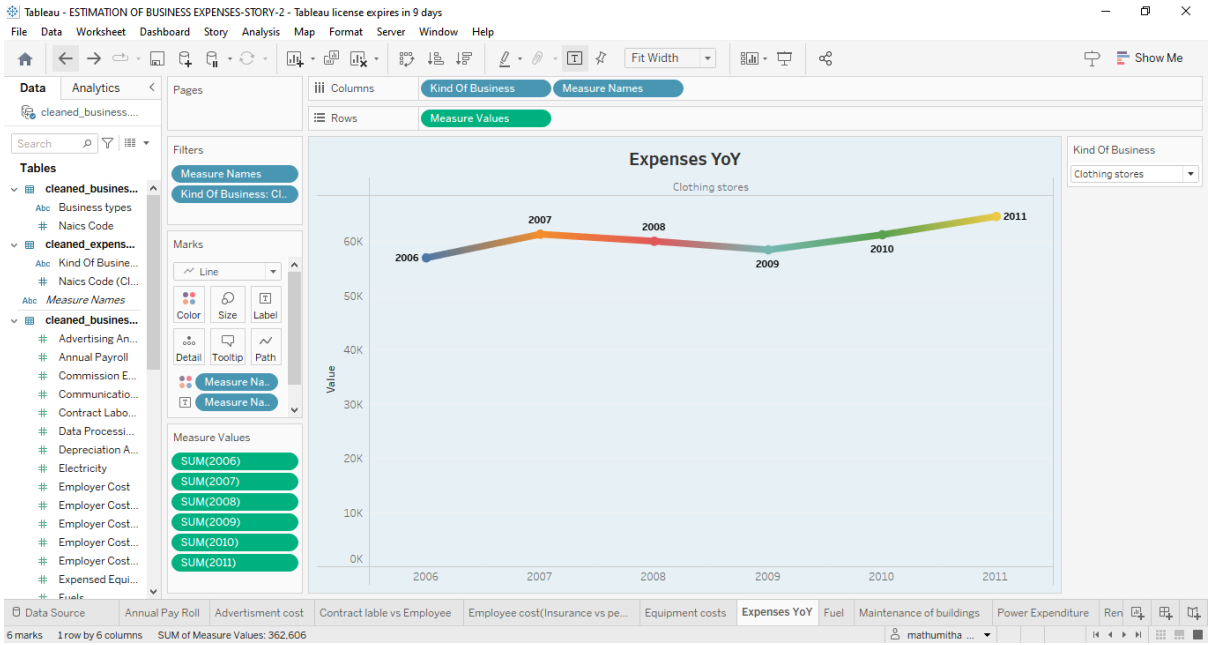
4.4 EMPLOYEES (INSURANCE VS PENSION)



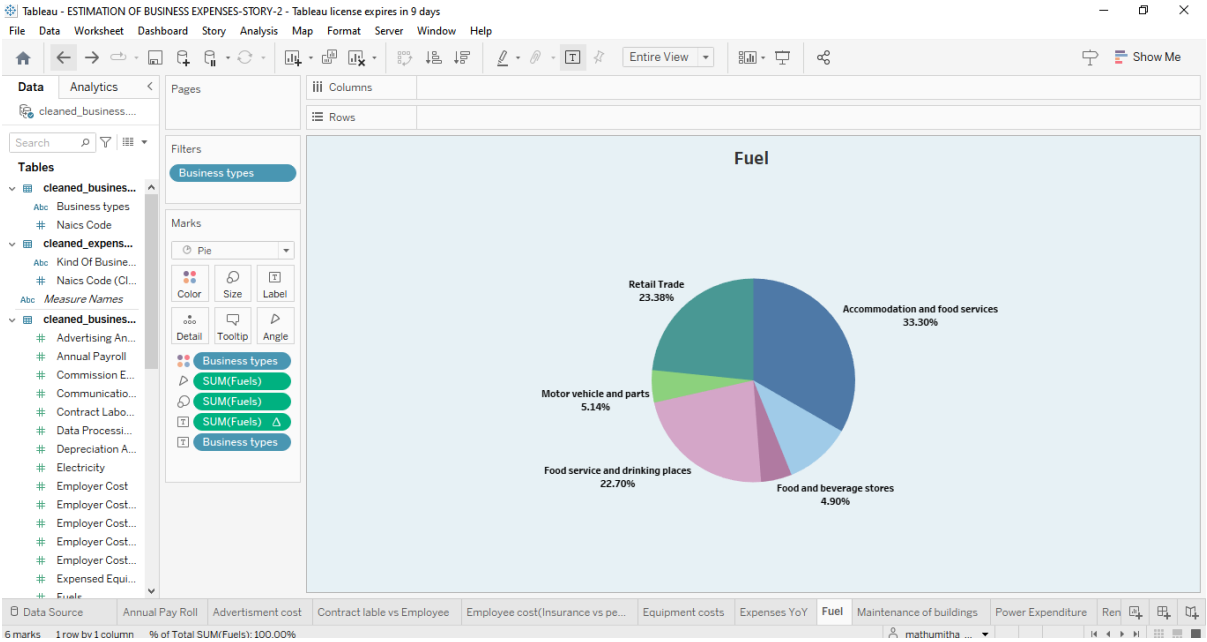
4.5 EQUIPMENT COSTS



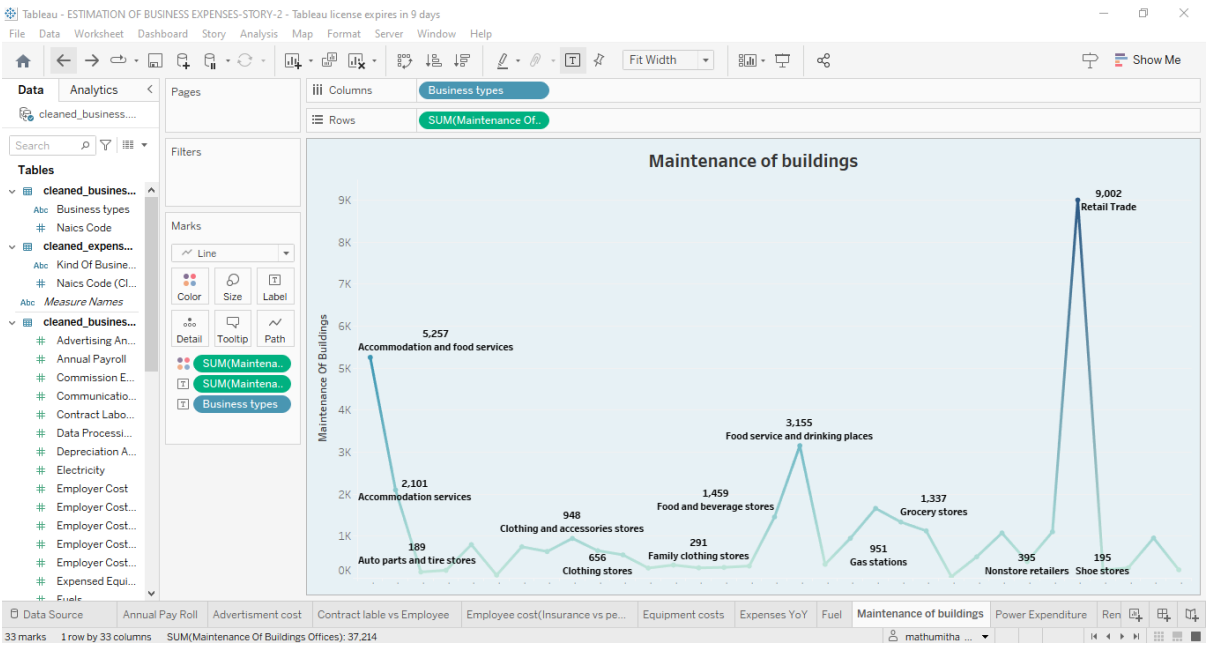
4.6 EXPENSES YoY



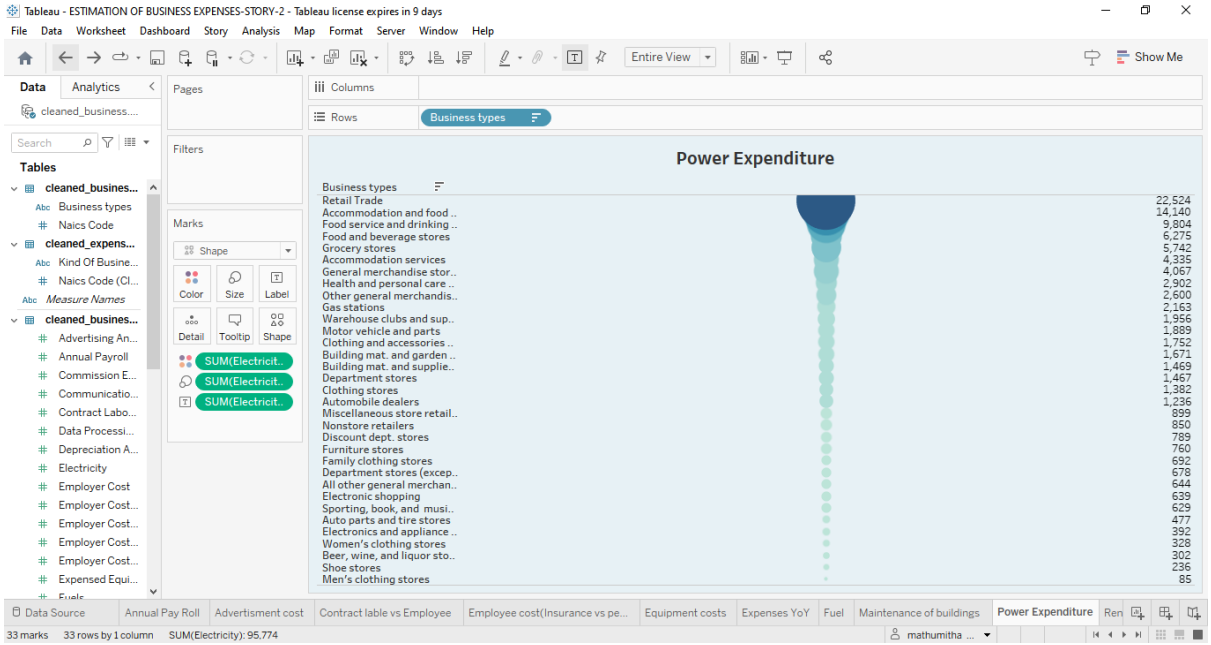
4.7 FUEL



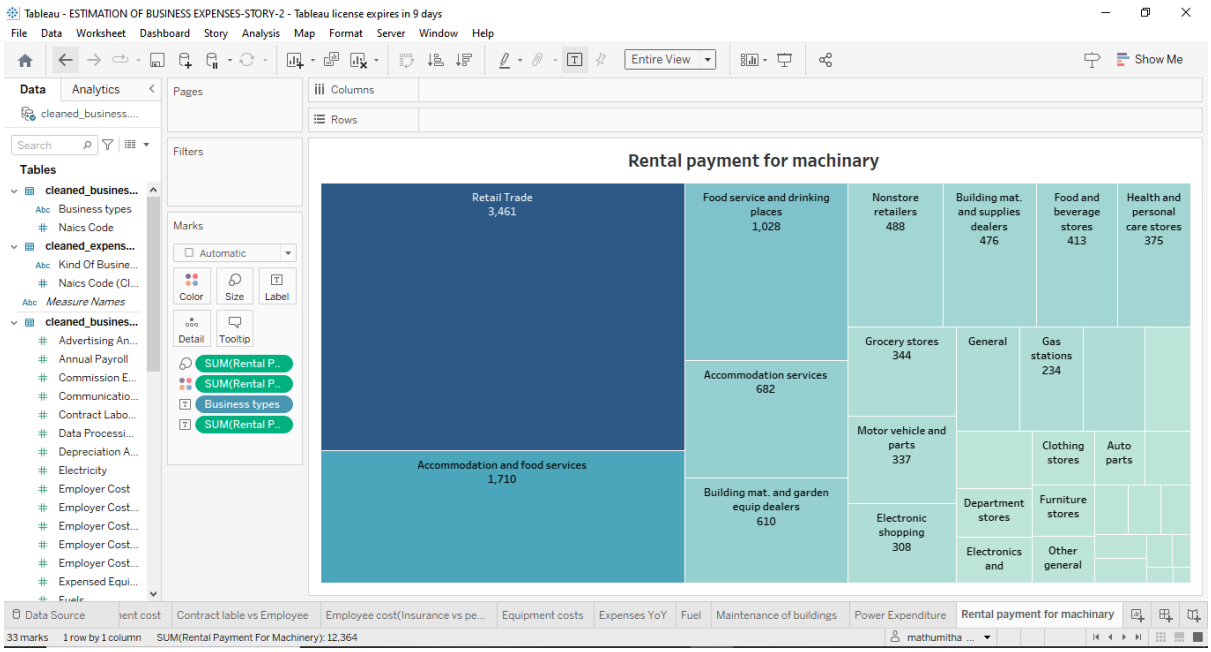
4.8 MAINTENANCE OF BULDINGS



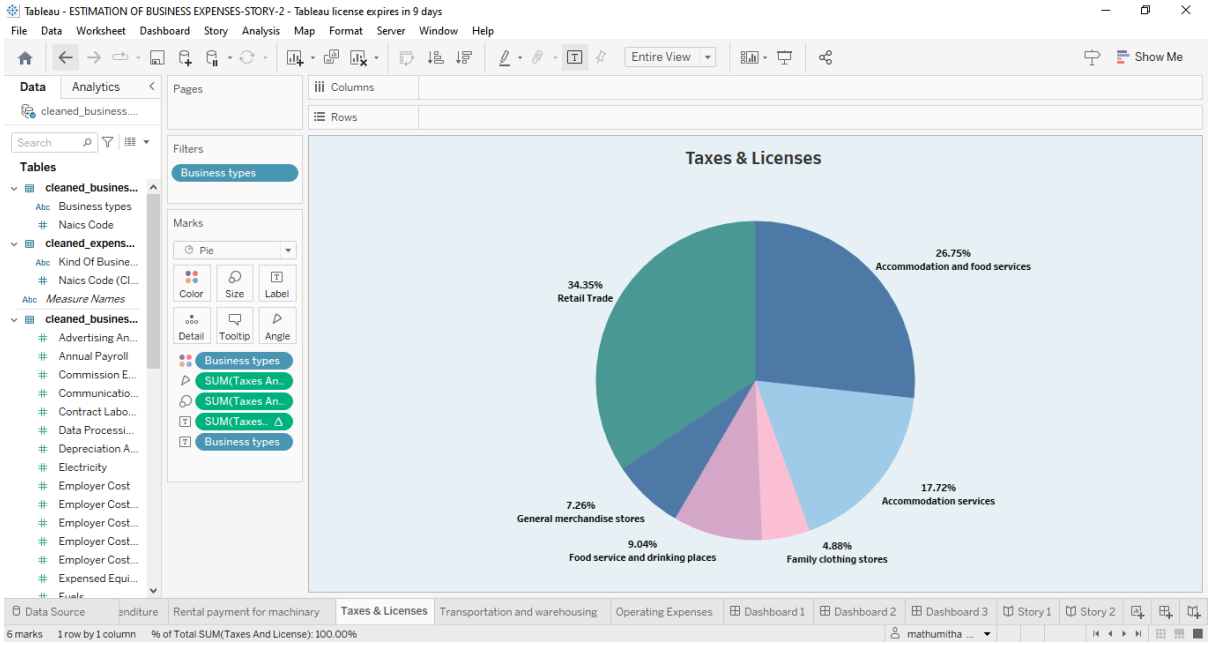
4.9 POWER EXPENDITURE



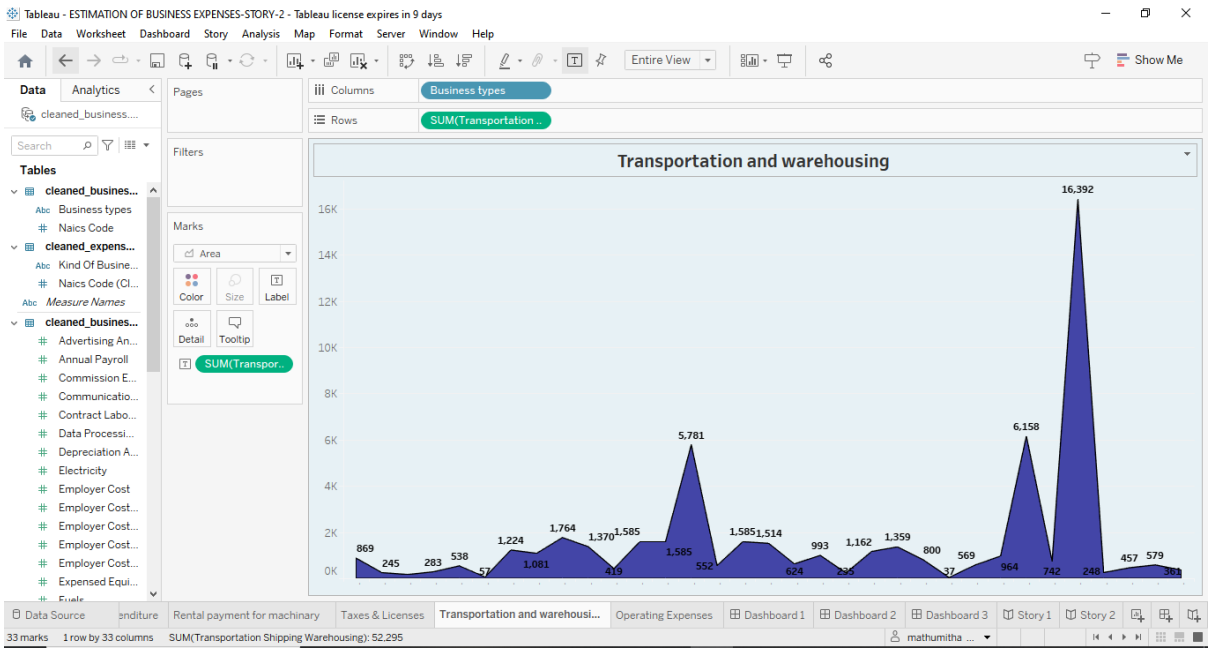
4.10 RENTAL PAYMENT MACHINERY



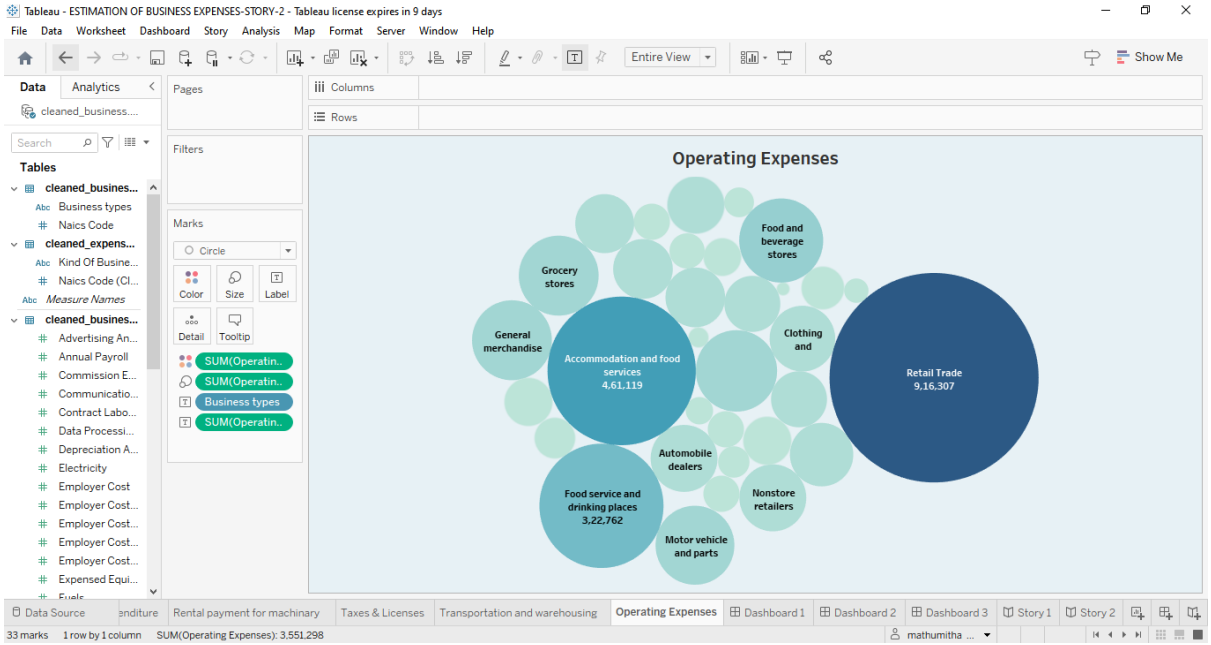
4.11 TAXEX & LICENSES



4.12 TRANSPORATION

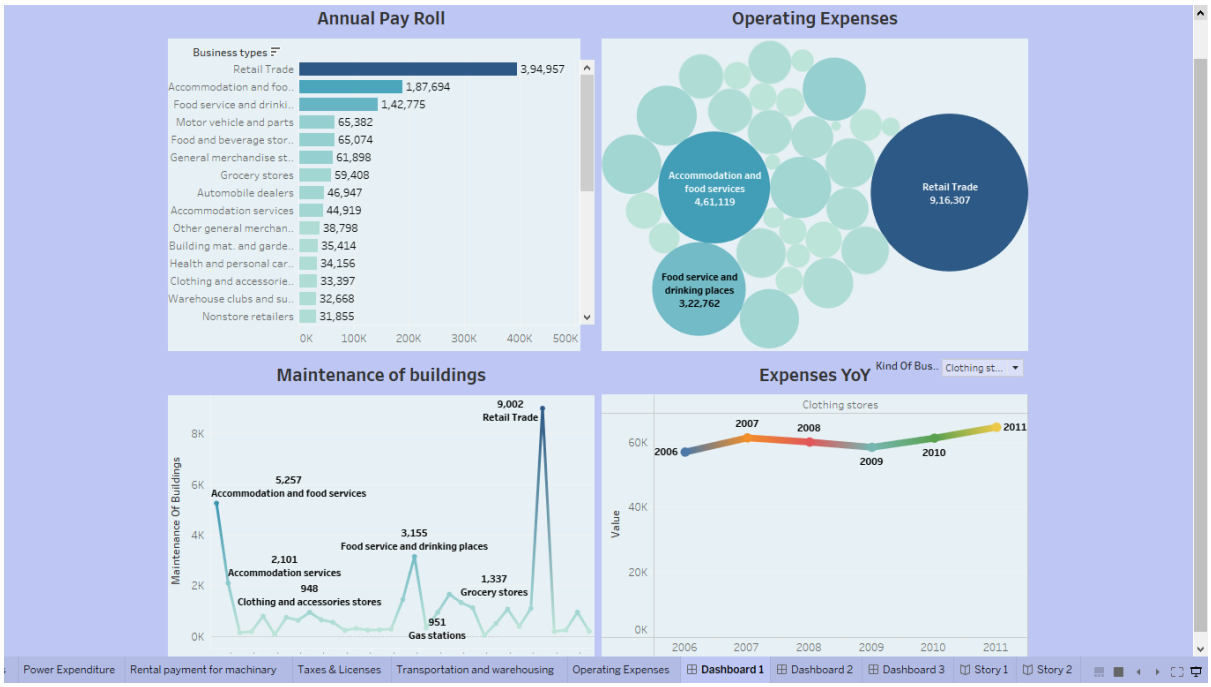


4.13 OPERATING EXPENSES

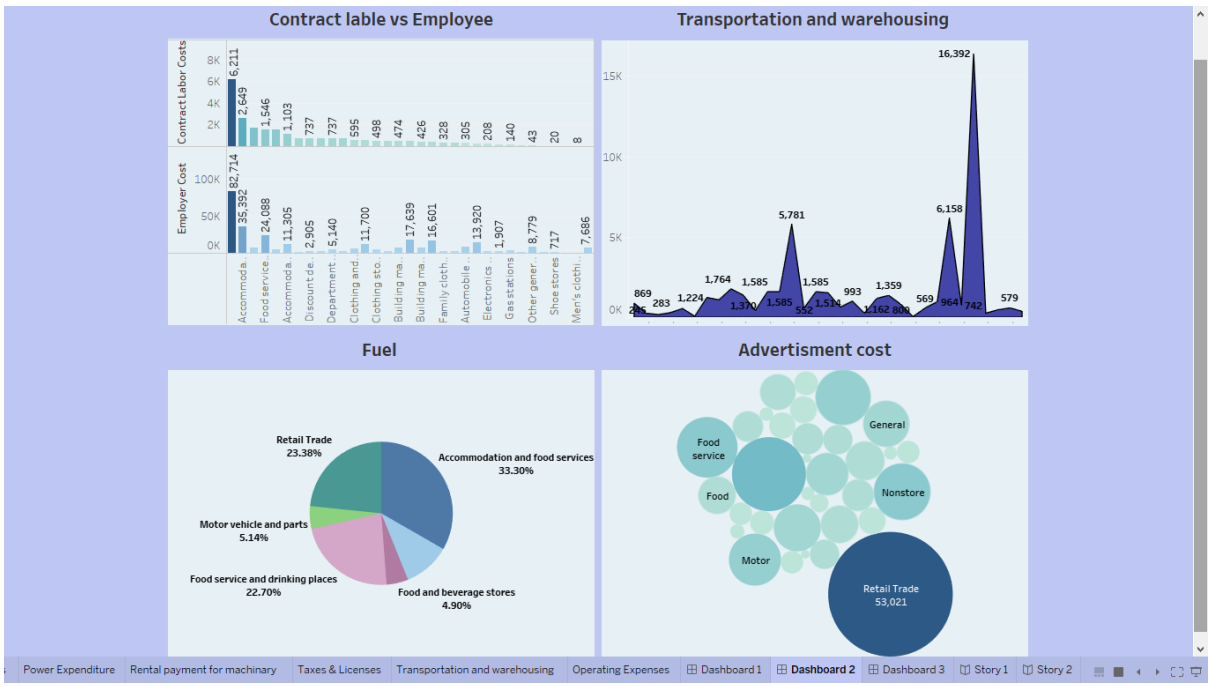


5. RESULT

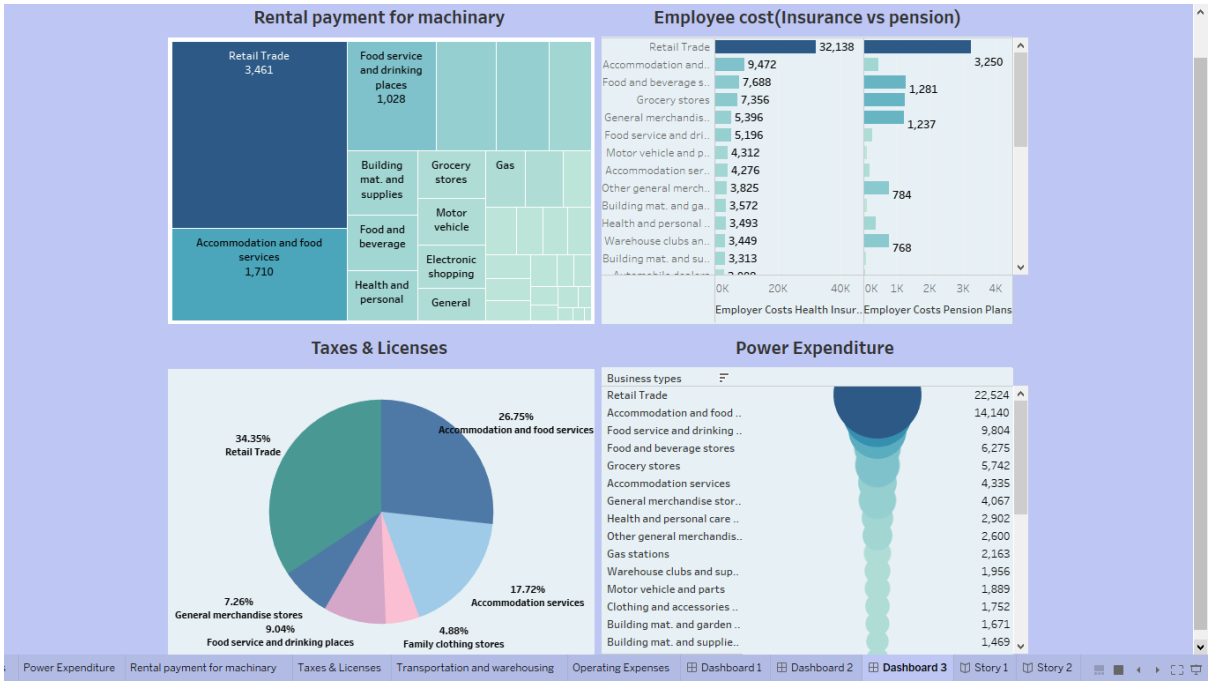
5.1 DASHBOARD-1



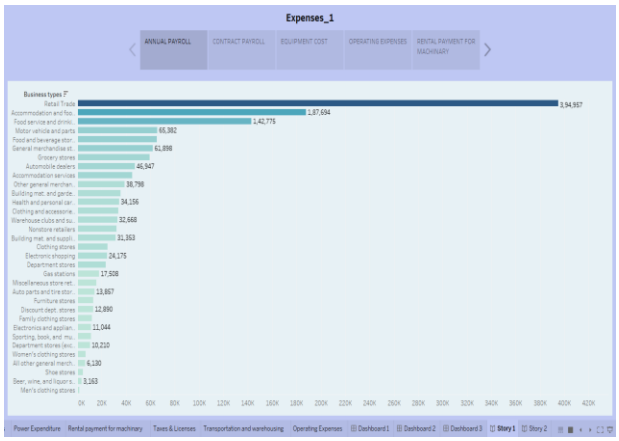
5.2 DASHBOARD-2

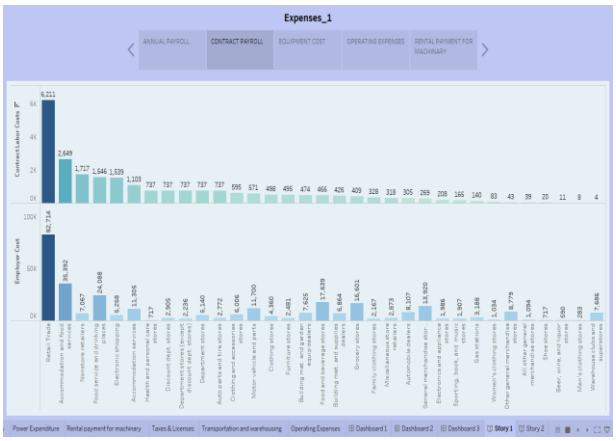


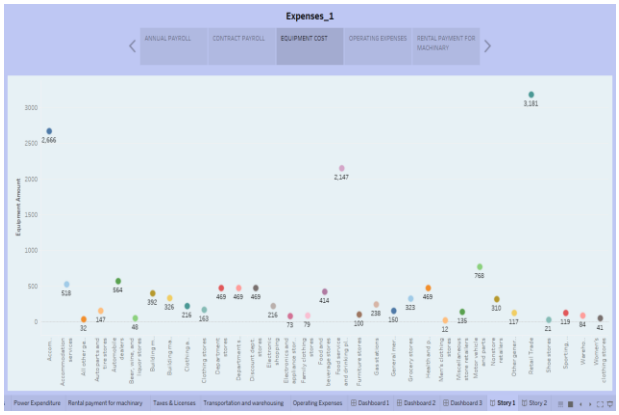
5.3 DASHBOARD-3

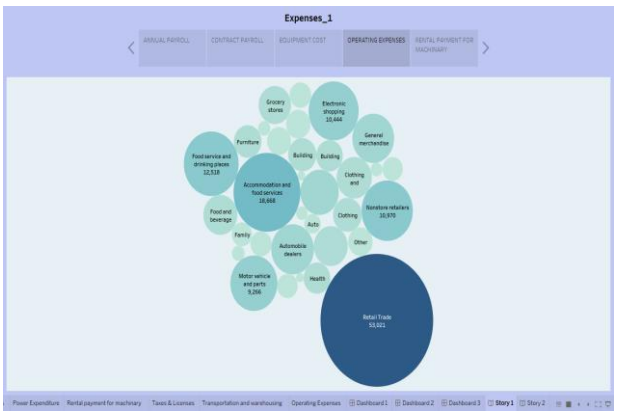


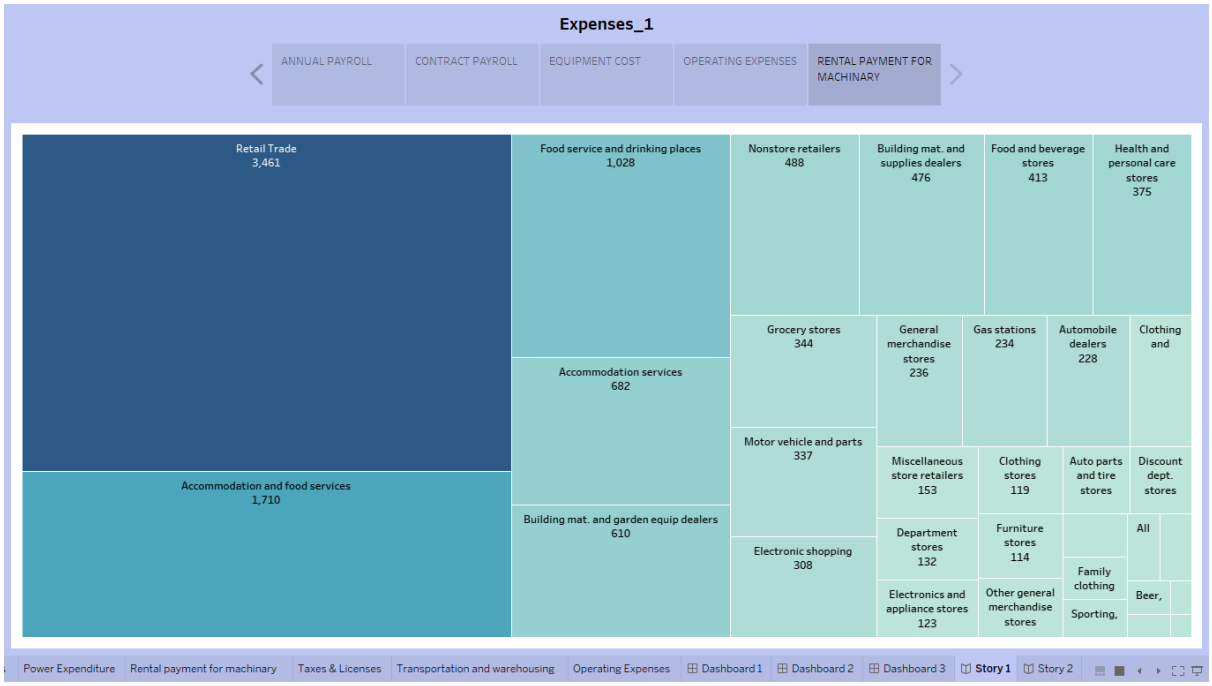
5.4 STORY-1


Expenses_1
ANNUAL PAYROLL
CONTRACT PAYROLL
EQUIPMENT COST
OPERATING EXPENSES
RENTAL PAYMENT FOR MACHINARY

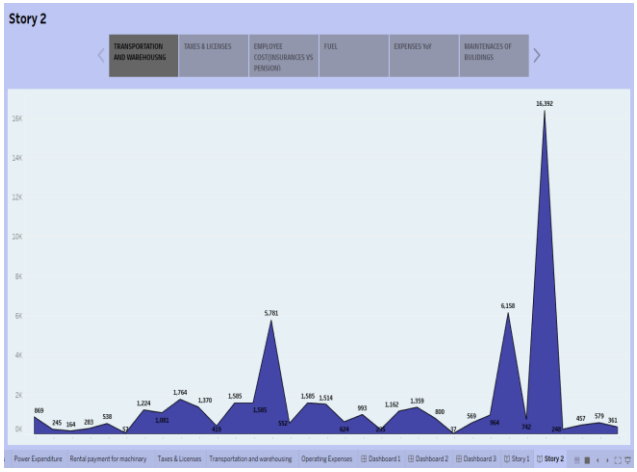

Expenses_1
ANNUAL PAYROLL
CONTRACT PAYROLL
EQUIPMENT COST
OPERATING EXPENSES
RENTAL PAYMENT FOR MACHINARY

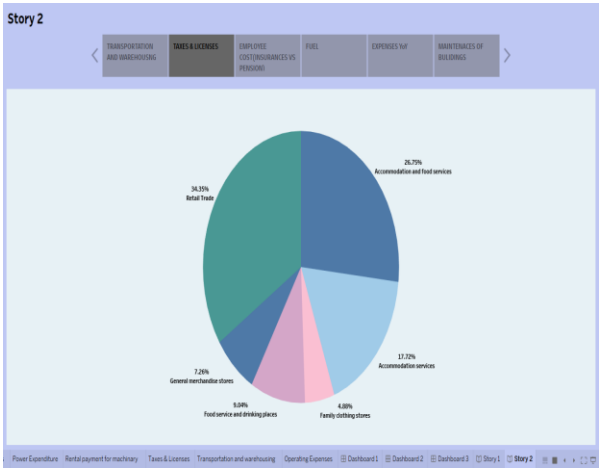

Expenses_1
ANNUAL PAYROLL
CONTRACT PAYROLL
EQUIPMENT COST
OPERATING EXPENSES
RENTAL PAYMENT FOR MACHINARY

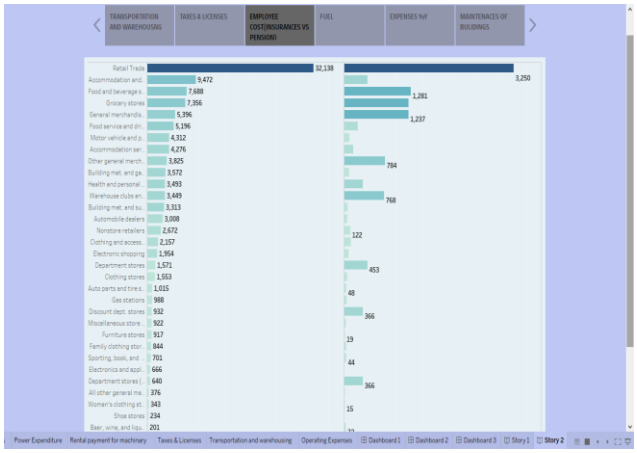

Expenses_1
ANNUAL PAYROLL
CONTRACT PAYROLL
EQUIPMENT COST
OPERATING EXPENSES
RENTAL PAYMENT FOR MACHINARY

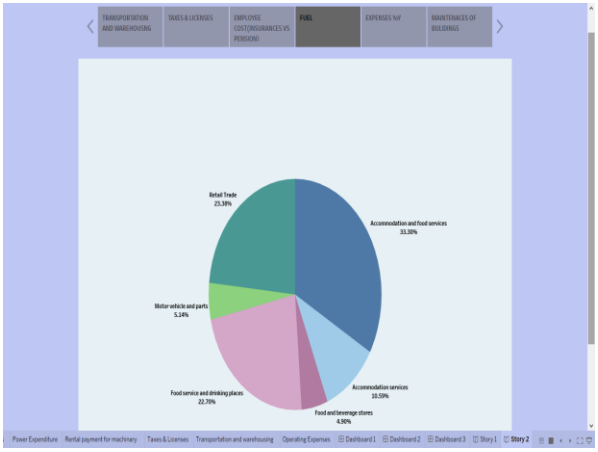

Expenses_1
ANNUAL PAYROLL
CONTRACT PAYROLL
EQUIPMENT COST
OPERATING EXPENSES
RENTAL PAYMENT FOR MACHINARY
Retail Trade 3,461
Food service and drinking places 1,028
Nonstore retailers 488
Building mat. and supplies dealers 476
Food and beverage stores 413
Health and personal care stores 375
Accommodation and food services 1,710
Accommodation services 682
Building mat. and garden equip dealers 610
Grocery stores 344
General merchandise stores 236
Gas stations 234
Automobile dealers 228
Clothing and
Motor vehicle and parts 337
Electronic shopping 308
Miscellaneous store retailers 153
Clothing stores 119
Auto parts and tire stores
Discount dept. stores
Department stores 132
Furniture stores 114
All
Family clothing
Electronics and appliance stores 123
Other general merchandise stores
Beer,
Sporting,
Power Expenditure
Rental payment for machinary
Taxes & Licenses
Transportation and warehousing
Operating Expenses
Dashboard 1
Dashboard 2
Dashboard 3
Story 1
Story 2

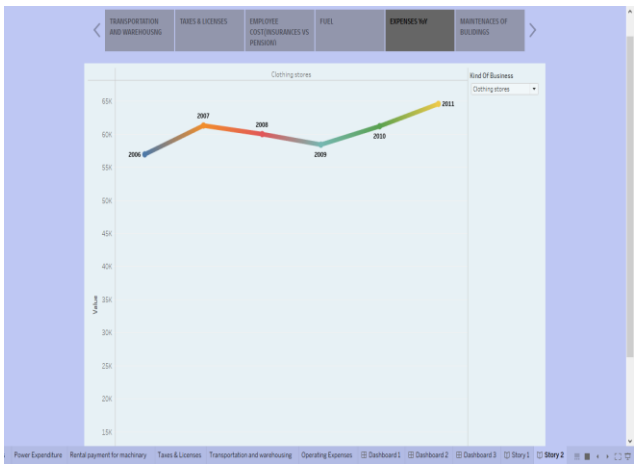
5.5 STORY-2

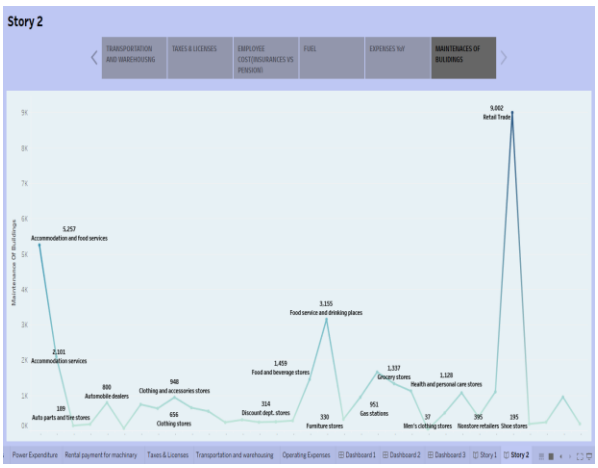

Story 2
TRANSPORTATION AND WAREHOUSING
TAXES & LICENSES
EMPLOYEE COST(INSURANCES VS PENSION)
FUEL
EXPENSES %V
MAINTENACES OF BUILDINGS


Story 2
TRANSPORTATION AND WAREHOUSING
TAXES & LICENSES
EMPLOYEE COST(INSURANCES VS PENSION)
FUEL
EXPENSES %V
MAINTENACES OF BUILDINGS
26.75%
Accommodation and food services
34.35%
Retail Trade
17.72%
Accommodation services
7.26%
General merchandise stores
9.04%
Food service and drinking places
4.80%
Family clothing stores


TRANSPORTATION AND WAREHOUSING
TAXES & LICENSES
EMPLOYEE COST(INSURANCES VS PENSION)
FUEL
EXPENSES %V
MAINTENACES OF BUILDINGS

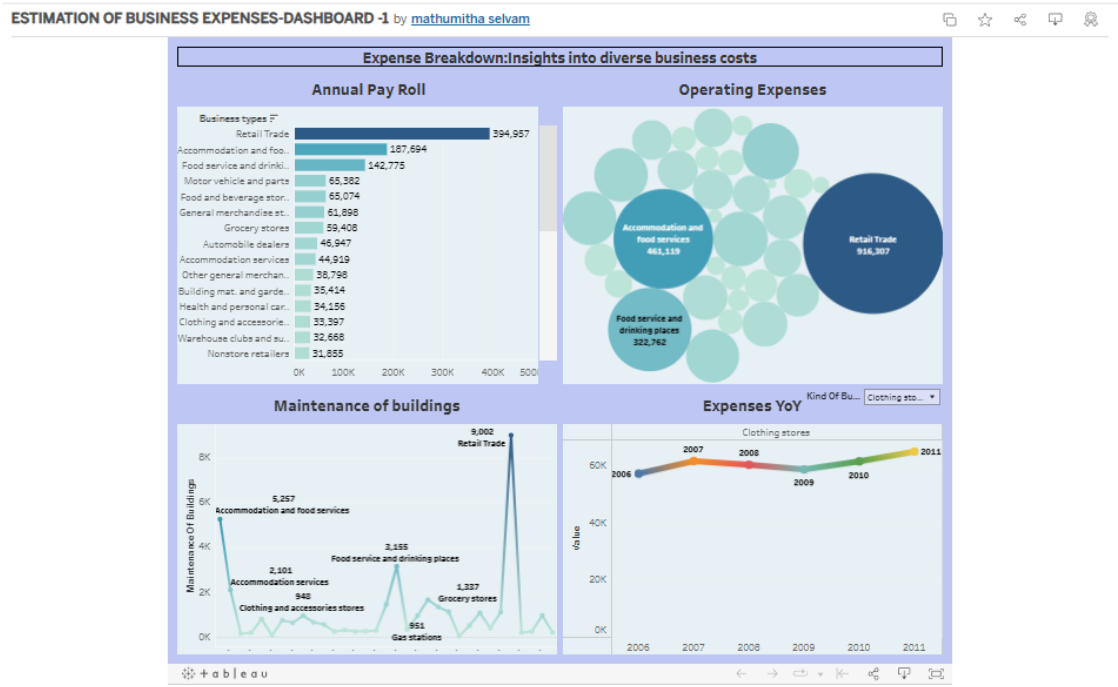

TRANSPORTATION AND WAREHOUSING
TAXES & LICENSES
EMPLOYEE COST(INSURANCES VS PENSION)
FUEL
EXPENSES %V
MAINTENACES OF BUILDINGS
Retail Trade
25.38%
Accommodation and food services
33.30%
Motor vehicle and parts
5.14%
Accommodation services
15.59%
Food service and drinking places
22.70%
Food and beverage stores
4.90%


TRANSPORTATION AND WAREHOUSING
TAXES & LICENSES
EMPLOYEE COST(INSURANCES VS PENSION)
FUEL
EXPENSES %V
MAINTENACES OF BUILDINGS
Clothing stores
Kind Of Business
Value
2006
2007
2008
2009
2010
2011

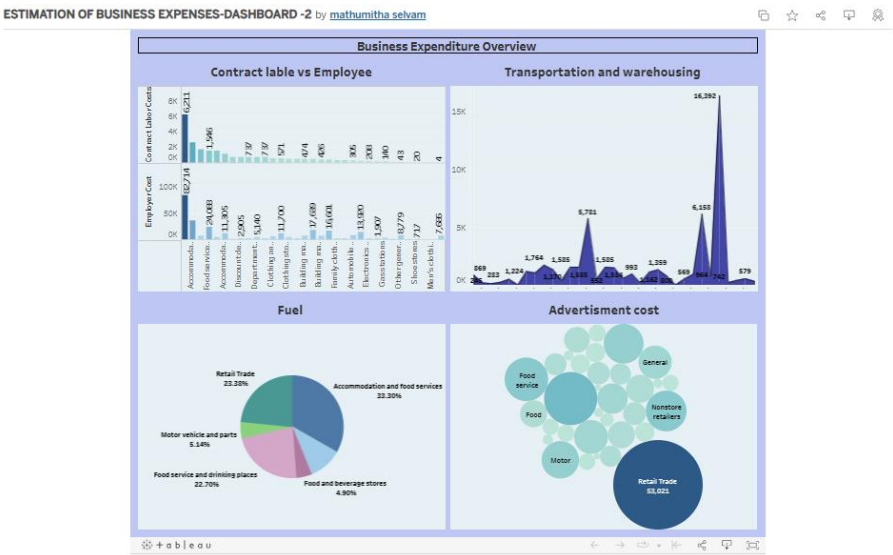

Story 2
TRANSPORTATION AND WAREHOUSING
TAXES & LICENSES
EMPLOYEE COST(INSURANCES VS PENSION)
FUEL
EXPENSES %V
MAINTENACES OF BUILDINGS
Maintenance Of Buildings
9,002
Retail Trade
5,257
Accommodation and food services
2,101
Accommodation services
3,155
Food service and drinking places
1,459
Food and beverage stores
1,337
Grocery stores
1,120
Health and personal care stores
800
Automobile dealers
948
Clothing and accessories stores
656
Clothing stores
314
Discount dept. stores
330
Furniture stores
951
Gas stations
37
Men's clothing stores
395
Nonstore retailers
195
Shoe stores
185
Auto parts and tire stores

6. PUBLICATIONS IN TABLEAU PUBLIC

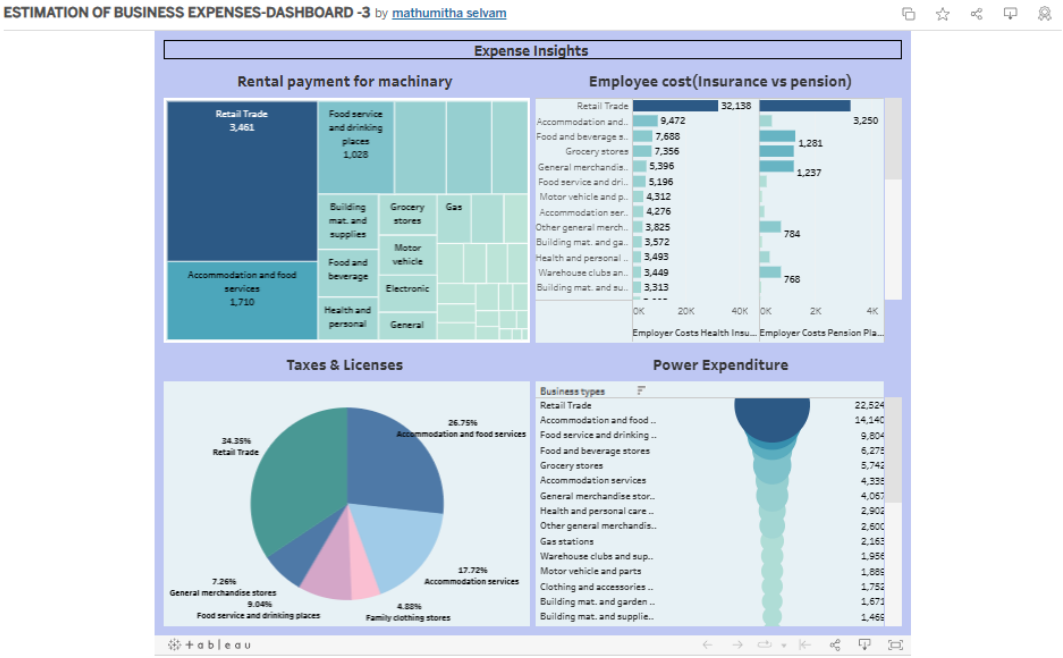
6.1 PUBLICATION OF DASHBOARD-1



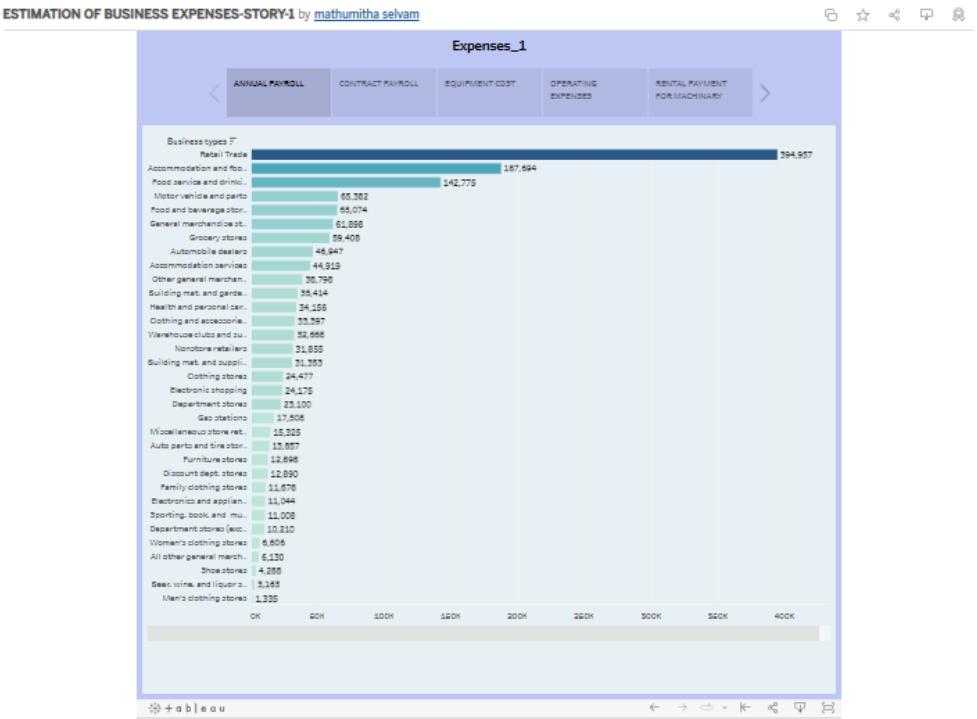
6.2 PUBLICATION OF DASHBOARD-2



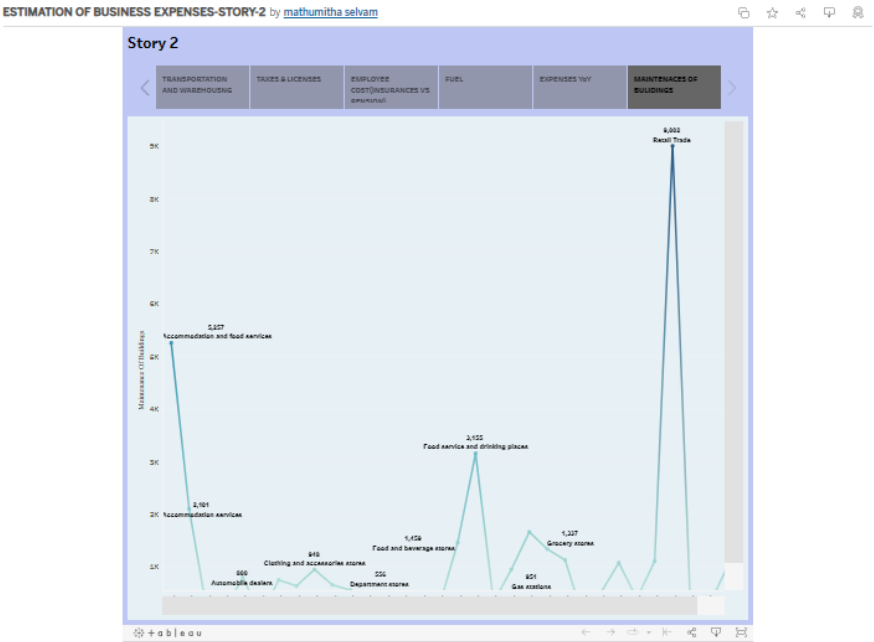
6.3 PUBLICATION OF DASHBOARD-3



6.4 PUBLICATION OF STORY-1



6.5 PUBLICATION OF STORY-2



7. ADVANTAGES AND DISADVANTAGES

7.1 ADVANTAGES

Cost estimation helps you determine your project's budget, schedule the work necessary and manage new resources. Cost estimates are also very crucial when it comes to winning new business. Property owners also use cost estimates to assess the feasibility of their projects before embarking on actual construction.

More accurate estimations result in smoother execution of the project. So you are spared last minute overheads, unforeseen expenditures and blocked working capital. What this means are lesser project costs.

It allows you to know whether you need to raise the price of your product or if you can keep it at a steady cost. Estimating business costs involves knowing your profit margins, accurate estimating of the time that will take, and considering the risks involved with completing the job.

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.

Using cost estimation, organizations can ensure the success of their projects and maintain a competitive edge in their respective industries.

Cost-benefit analysis is a systematic method for quantifying and then comparing the total costs to the total expected rewards of undertaking a project or making an investment. If the benefits greatly outweigh the costs, the decision should go ahead; otherwise, it should probably not.

7.2 DISADVANTAGES

Costing methods are typically not useful for figuring out tax liabilities, which means that cost accounting can't provide a complete analysis of a company's true costs.

Expenditures/unwanted costs occurred between processes are difficult to prevent very expensive. No standard procedure in estimation.

There are many pros and cons to cost reduction. The pros include saving money, improving efficiency, and reducing waste. The cons include potential job losses, lower quality products, and less customer satisfaction.

It is less reliable for old properties as it is difficult to estimate the depreciation of properties that are older.

- You have to pay the full cost of the asset up front which can affect your cash flow.
- You may need to use an overdraft or loan to fund the purchase - overdrafts can be withdrawn at short notice and in some cases early repayment of loans can be demanded.
- Small businesses might not get the same price as bigger businesses.
- If you do not have good product knowledge and experience you could make an unwise choice and you may end up buying equipment you don't need.
- You can't easily spread the cost to coincide with money coming into the business.
- You are entirely responsible for the maintenance and repair of the asset, which can be a risk if the equipment breaks down or needs replacing.
- You won't be able to take advantage of the tax benefits of deducting the cost of rental from your taxable income.
- The value of the asset may depreciate over time and be worth less than you paid for it.

8. APLLICATION

In the screening estimate of a new facility, a single parameter is often used to describe a cost function. For example, the cost of a power plant is a function of electricity generating capacity expressed in megawatts, or the cost of a sewage treatment plant as a function of waste flow expressed in million gallons per day.

The general conditions for the application of the single parameter cost function for screening estimates are:

- Exclude special local conditions in historical data
- Determine new facility cost on basis of specified size or capacity (using the methods described in Sections 5.3 to 5.6)
- Adjust for inflation index
- Adjust for local index of construction costs
- Adjust for different regulatory constraints
- Adjust for local factors for the new facility

Some of these adjustments may be done using compiled indices, whereas others may require field investigation and considerable professional judgment to reflect differences between a given project and standard projects performed in the past.

9. CONCLUSION

Cost estimation is a vital process that involves predicting the financial requirements of a project or activity. It provides valuable insights that help you to make informed decisions, set budgets, allocate resources effectively, manage risks, and gain a competitive advantage. Using cost estimation, organizations can ensure the success of their projects, deliver projects on time and within budget, and maintain their reputation in the industry.

Controlling expenses is an extremely important task for financial managers today. Optimization of expenses can help companies outperform the industry. However, this should also be done in a way where quality is not compromised. Quality is of extreme importance in industries such as airlines. Lowering costs by reducing quality can come to haunt a company in the form of severe penalties or ultimately closure of operations.

10.FUTURE SCPOE

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 labour — and calculates a total amount that determines a project's budget.

The purpose of cost estimation is to give project stakeholders accurate information concerning the related project costs. It is easier to make lasting decisions if there is information to back them up. Cost estimation also gives clients value-aided options and helps clients minimize expenses

Cost estimation sets the stage for a budget that will provide adequate funding to complete a project on time and in accordance with quality standards. Going the extra step and assigning budgets to various activities helps the team stay within the larger budget and avoid wasteful spending.