



Data Analysis on US Cost of Living

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1. Introduction

Recently, the cost of living has been a big concern for everyone, which is the center point of conversion. So, we thought to bring the project to determine the possible driven factors.

The driving factors that affect the cost of living in the US are housing, healthcare, childcare, food, tax, transportation, and other necessities.

After the pandemic, the prices of housing went higher. When the government increased interest rates, inflation was also at an all-time high that affects food prices. Car prices are also going up because of the circuit shortage. Gas prices also went way high up because of the war happening around the world. Now, we have healthcare and childcare to look up which might be able to do analysis after this project.

What can we learn?

There is nothing we can do about increasing the cost of living, but we can certainly make a little adjustment by moving to different parts of the US.

To analyze the pattern, we used the US Cost of Living dataset. It helps us figure out how much money families in different parts of the US need for things like housing, food, and healthcare. It can show us if these families have enough money to live comfortably or if they might be struggling financially. It also helps us compare the costs of living in different places and understand if certain areas are more affordable for different types of families. This information can be useful for making decisions about where to live, understanding income differences between areas, and finding out which places are more or less expensive for families.

2. Dataset Description

The US Family Budget Dataset is a comprehensive collection of data related to the cost of living in different 1877 US counties based on the Family Budget Calculator by the Economic Policy Institute (EPI). EPI measures the income a family needs in order to attain a modest yet adequate standard of living. The budgets estimate community-specific costs for 10 family types (one or two adults with zero to four children) in all counties and metro areas in the United States.

We used this dataset from Kaggle.

Dataset URL: <https://www.kaggle.com/datasets/asaniczka/us-cost-of-living-dataset-3171-counties/data>

It includes 15 columns such as case ID, state, metropolitan status, county, family member count, costs for housing, food, transportation, healthcare, other necessities, childcare, taxes, total cost, and median family income. It contains a total of 31,431 records.

Here is an overview of our dataset.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	case_id	stateisMetro	areaname	county	family_member_count	housing_cost	food_cost	transportation_co	healthcare_cost	other_necessities_co	childcare_cost	taxes	total_cost	median_family_income	
2	1 AL	TRUE	Montgomery, Autauga Count	1p0c	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	73010.41406		
3	1 AL	TRUE	Montgomery, Autauga Count	1p1c	12067.5024	5091.70788	11588.19288	8659.5564	6217.45896	6147.8298	7422	57194.3256	73010.41406		
4	1 AL	TRUE	Montgomery, Autauga Count	1p2c	12067.5024	7460.20308	12361.7772	11581.6326	7075.65816	15824.694	9770	76141.0308	73010.41406		
5	1 AL	TRUE	Montgomery, Autauga Count	1p3c	15257.1504	9952.23924	13452.186	14503.7076	9134.3562	18802.1892	13102	94203.5328	73010.41406		
6	1 AL	TRUE	Montgomery, Autauga Count	1p4c	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13469	100823.52	73010.41406		
7	1 AL	TRUE	Montgomery, Autauga Count	2p0c	10180.2942	6334.01436	12861.8866	11474.95968	5983.78524	0	8237	55071.6684	73010.41406		
8	1 AL	TRUE	Montgomery, Autauga Count	2p1c	12067.5024	7883.31888	13589.112	14397.0372	7228.96944	6147.8298	9461	70773.6744	73010.41406		
9	1 AL	TRUE	Montgomery, Autauga Count	2p2c	12067.5024	9984.05268	14723.6076	17319.1128	7990.1484	15824.694	11161	89077.8696	73010.41406		
10	1 AL	TRUE	Montgomery, Autauga Count	2p3c	15257.1504	12189.7704	14994.6	20241.1872	9945.10176	18802.1892	13210	104640.1524	73010.41406		
11	1 AL	TRUE	Montgomery, Autauga Count	2p4c	15257.1504	14917.3584	15064.2636	23163.2652	10933.41504	18802.1892	13417	111554.8596	73010.41406		
12	2 AL	TRUE	Daphne-Fairh Baldwin Count	1p0c	8616	3714.29484	10731.65256	5593.47984	4467.7518	0	6456	39578.8944	77884.75781		
13	2 AL	TRUE	Daphne-Fairh Baldwin Count	1p1c	11064	5473.96836	11522.93844	8444.00688	5992.35628	5962.7142	7097	55556.5956	77884.75781		
14	2 AL	TRUE	Daphne-Fairh Baldwin Count	1p2c	11064	8020.27812	12869.3352	11294.53344	6914.98608	15348.1992	9478	74988.9672	77884.75781		
15	2 AL	TRUE	Daphne-Fairh Baldwin Count	1p3c	14988	10699.404	13452.9648	14145.0612	9307.55928	18236.04	12998	93826.8756	77884.75781		
16	2 AL	TRUE	Daphne-Fairh Baldwin Count	1p4c	14988	13096.794	13773.354	16995.588	10176.22776	18236.04	13434	100699.524	77884.75781		
17	2 AL	TRUE	Daphne-Fairh Baldwin Count	2p0c	8676	6809.54076	12888.26	11186.95968	5611.02168	0	7820	52941.1586	77884.75781		
18	2 AL	TRUE	Daphne-Fairh Baldwin Count	2p1c	11064	8475.15888	14214.2784	14037.486	7079.8074	5962.7142	9341	70174.8576	77884.75781		
19	2 AL	TRUE	Daphne-Fairh Baldwin Count	2p2c	11064	10733.6066	14768.1084	16888.014	7898.13276	15348.1992	10867	87567.2688	77884.75781		
20	2 AL	TRUE	Daphne-Fairh Baldwin Count	2p3c	14988	13104.918	15071.3112	19738.5408	10179.1728	18236.04	13173	104490.8316	77884.75781		
21	2 AL	TRUE	Daphne-Fairh Baldwin Count	2p4c	14988	16037.2776	15174.9828	22589.0664	12141.68184	18236.04	13464	111728.7192	77884.75781		
22	3 AL	FALSE	Barbour Coun Barbour Count	1p0c	5856	3237.03924	10890.72876	5686.79000	3294.7668	0	5458	34423.602	42822.75391		
23	3 AL	FALSE	Barbour Coun Barbour Count	1p1c	7776	4770.609	11436.48264	8495.9568	4546.13124	4846.73616	5426	47297.4288	42822.75391		
24	3 AL	FALSE	Barbour Coun Barbour Count	1p2c	7776	6989.73852	12036.7944	11305.12356	5350.2096	11644.67508	6235	61337.8476	42822.75391		
25	3 AL	FALSE	Barbour Coun Barbour Count	1p3c	9672	9324.6204	12404.508	14114.2908	6883.22532	13736.3484	7543	73678.248	42822.75391		
26	3 AL	FALSE	Barbour Coun Barbour Count	1p4c	9672	11413.9658	12330.8248	16923.4572	7640.27712	13736.3484	7204	79120.8168	42822.75391		
27	3 AL	FALSE	Barbour Coun Barbour Count	2p0c	5904	5934.57168	12711.6432	11373.58008	4289.58144	0	6632	46845.492	42822.75391		
28	3 AL	FALSE	Barbour Coun Barbour Count	2p1c	7776	7386.17208	13271.94	14182.746	5493.85332	4846.73616	7386	60343.7112	42822.75391		
29	3 AL	FALSE	Barbour Coun Barbour Count	2p2c	7776	9354.42768	13611.864	16991.9136	6207.02928	11644.67508	8052	73638.2052	42822.75391		
30	3 AL	FALSE	Barbour Coun Barbour Count	2p3c	9672	11421.0462	13720.7796	19801.0812	7642.84272	13736.3484	8714	84708.5916	42822.75391		
31	3 AL	FALSE	Barbour Coun Barbour Count	2p4c	9672	13976.622	13639.788	22610.2476	8568.82836	13736.3484	8254	90457.3884	42822.75391		
32	4 AL	TRUE	Birmingham-H Bibb County	1p0c	9793.92164	3050.28684	11446.48464	5845.47984	3994.50552	0	6261	38571.75	59443.98828		
33	4 AL	TRUE	Birmingham-H Bibb County	1p1c	9779.52168	4495.38168	12233.8776	8821.218	5172.36072	5360.56824	6450	52312.9272	59443.98828		
34	4 AL	TRUE	Birmingham-H Bibb County	1p2c	9779.52168	6586.48536	13566.48	11796.9558	5930.05008	13798.2588	8121	69578.5728	59443.98828		
35	4 AL	TRUE	Birmingham-H Bibb County	1p3c	12717.2832	8786.66232	14094.588	14772.6948	7791.72732	16394.4708	10570	85127.244	59443.98828		
36	4 AL	TRUE	Birmingham-H Bibb County	1p4c	12717.2832	10755.4687	14358.126	17748.432	8505.10332	16394.4708	10692	91170.768	59443.98828		

The table below describes the data set in detail.

Data Field	Description	Example Values
case_id	Unique identifier for each area name. Data type: Integer	1 to 3171
state	The state where the county is located. Data type: String	TX, GA, VA, CA, and many more.
isMetro	Indicates whether the county is part of a metropolitan area. Data type: Boolean	True, False
areaname	Area name for the location. Data type: String	Atlanta-Sandy Springs-Roswell, GA HUD Metro FMR Area
county	Name of the county. Data type: String	Washington County, Autauga County, and many more.

family_member_count	Number of family members in the household. P means parent, C means children Data type: String	1p0c, 2p2c, 1p3c
housing_cost	Estimated annual cost of housing for the family type in the county. Data type: Float	4.21k-61.7k
food_cost	Estimated annual cost of food for the family type in the county. Data type: Float	2.22k-31.2k
transportation_cost	Estimated annual cost of transportation for the family type in the county. Data type: Float	2.22k-19.8k
healthcare_cost	Estimated annual cost of healthcare for the family type in the county. Data type: Float	3.48k-37.3k
other_necessities_cost	Estimated annual cost of other necessities for the family type in the county. Data type: Float	2.61k-28.8k
childcare_cost	Estimated annual cost of childcare for the family type in the county. Data type: Float	0-48.8k
taxes	Estimated annual tax amount for the family type in the county. Data type: Float	1.03k-47.8k
total_cost	Total estimated annual cost of living for the family type in the county. Data type: Float	30.1k-224k
median_family_income	Median annual income for families in the county. Data type: Float	25.5k-178k

3. Data Cleaning

Data cleaning is an essential step that should be conducted before analyzing and visualizing.

Data cleaning involves fixing or removing incorrect, incorrectly formatted, duplicate, or incomplete data within a dataset.

3.1. Removing Repeated Word

Column Name: County

Before:

The "County" column includes value like "Los Angeles/Autauga County," where the word "County" was repeated. To fix this and display only the county name, we used a function called SUBSTITUTE() to take out the extra word.

A	B	C	D	E	F	G	H	I	J	K	L
1	case_id	state	isMetro	areaname	county	family_member_cour	housing_cost	food_cost	transportation_co	healthcare_co	other_necessities_co
2	1 AL	TRUE	Montgomery, AL MSA	Autauga County	1p0c	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0
3	1 AL	TRUE	Montgomery, AL MSA	Autauga County	1p1c	12067.5024	5091.70788	11588.19288	8659.5564	6217.45896	6147.8298
4	1 AL	TRUE	Montgomery, AL MSA	Autauga County	1p2c	12067.5024	7460.20308	12361.7772	11581.6326	7075.65816	15824.694
5	1 AL	TRUE	Montgomery, AL MSA	Autauga County	1p3c	15257.1504	9952.23924	13452.186	14503.7076	9134.3562	18802.1892
6	1 AL	TRUE	Montgomery, AL MSA	Autauga County	1p4c	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892
7	1 AL	TRUE	Montgomery, AL MSA	Autauga County	2p0c	10180.2942	6334.01436	12861.8868	11474.95968	5983.78524	0
8	1 AL	TRUE	Montgomery, AL MSA	Autauga County	2p1c	12067.5024	7883.31888	13589.112	14397.0372	7228.96944	6147.8298
9	1 AL	TRUE	Montgomery, AL MSA	Autauga County	2p2c	12067.5024	9984.05268	14723.6076	17319.1128	7990.1484	15824.694
10	1 AL	TRUE	Montgomery, AL MSA	Autauga County	2p3c	15257.1504	12189.7704	14994.6	20241.1872	9945.10176	18802.1892
11	1 AL	TRUE	Montgomery, AL MSA	Autauga County	2p4c	15257.1504	14917.3584	15064.2636	23163.2652	10933.41504	18802.1892
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	1p0c	8616	3714.29484	10731.65256	5593.47984	4467.7518	0
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	1p1c	11064	5473.96836	11522.93844	8444.00688	5992.35828	5962.7142
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	1p2c	11064	8020.27812	12869.3352	11294.53344	6914.98608	15348.1992
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	1p3c	14988	10699.404	13452.9648	14145.0612	9307.55928	18236.04
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	1p4c	14988	13096.794	13773.354	16995.588	10176.22776	18236.04
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	2p0c	8676	6809.54076	12838.26	11186.95968	5611.02168	0
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	2p1c	11064	8475.15888	14214.2784	14037.486	7079.8074	5962.7142
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	2p2c	11064	10733.6066	14768.1084	16888.014	7898.13276	15348.1992
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	2p3c	14988	13104.918	15071.3112	19738.5408	10179.1728	18236.04
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	2p4c	14988	16037.2776	15174.98282	22589.0664	11241.68184	18236.04
22	3 AL	FALSE	Barbour County, AL	Barbour County	1p0c	5856	3237.03924	10890.72876	5686.79004	3294.7668	0
23	3 AL	FALSE	Barbour County, AL	Barbour County	1p1c	7776	4770.609	11436.48264	8495.9568	4546.13124	4846.73616
24	3 AL	FALSE	Barbour County, AL	Barbour County	1p2c	7776	6989.73852	12036.7944	11305.12356	5350.2096	11644.67508
25	3 AL	FALSE	Barbour County, AL	Barbour County	1p3c	9672	9324.6204	12404.508	14114.2908	6883.22532	13736.3484
26	3 AL	FALSE	Barbour County, AL	Barbour County	1p4c	9672	11413.96568	12530.8248	16923.4572	7640.27712	13736.3484
27	3 AL	FALSE	Barbour County, AL	Barbour County	2p0c	5904	5934.57168	12711.6432	11373.58008	4289.58144	0
28	3 AL	FALSE	Barbour County, AL	Barbour County	2p1c	7776	7386.17208	13271.94	14182.746	5493.85332	4846.73616
29	3 AL	FALSE	Barbour County, AL	Barbour County	2p2c	7776	9354.42768	13611.864	16991.9136	6207.02928	11644.67508
30	3 AL	FALSE	Barbour County, AL	Barbour County	2p3c	9672	11421.0462	13720.7796	19801.0812	7642.84272	13736.3484
31	3 AL	FALSE	Barbour County, AL	Barbour County	2p4c	9672	13976.622	13639.788	22610.2476	8568.82836	13736.3484
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	1p0c	7973.92164	3050.28684	11446.48464	5845.47984	3994.50552	0
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	1p1c	9779.52168	4495.38168	12233.8776	8821.218	5172.36072	5360.56824
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	1p2c	9779.52168	6586.48536	13566.48	11796.9558	5930.05008	13798.2588
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	1p3c	12717.2832	8786.66232	14094.588	14772.6948	7791.72732	16394.4708
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	1p4c	12717.2832	10755.4687	14358.126	17748.432	8505.10332	16394.4708

SUBSTITUTE () is used to replace the word "County" with " "(blank spaces). Column E refers to the "county" column.

A	B	C	D	E	F	G	H	I	J	K
1	case_id	stateisMetro	areaname	county	County	family_member_cour	housing_cost	food_cost	transportation_co	healthcare_cos
2	1 AL	TRUE	Montgomery, AL MSA	Autauga County	=SUBSTITUTE(E2, " County", "")	1p0c	8505.72876	3454.91712	10829.16876	5737.47984
3	1 AL	TRUE	Montgomery, AL MSA	Autauga County	SUBSTITUTE(text, old_text, new_text, [instance_num])	1p1c	12067.5024	5091.70788	11588.19288	8659.5564
4	1 AL	TRUE	Montgomery, AL MSA	Autauga County		1p2c	12067.5024	7460.20308	12361.7772	11581.6326
5	1 AL	TRUE	Montgomery, AL MSA	Autauga County		1p3c	15257.1504	9952.23924	13452.186	14503.7076
6	1 AL	TRUE	Montgomery, AL MSA	Autauga County		1p4c	15257.1504	12182.214	13744.5984	17425.7856
7	1 AL	TRUE	Montgomery, AL MSA	Autauga County		2p0c	10180.2942	6334.01436	12861.8868	11474.95968
8	1 AL	TRUE	Montgomery, AL MSA	Autauga County		2p1c	12067.5024	7883.31888	13589.112	14397.0372
9	1 AL	TRUE	Montgomery, AL MSA	Autauga County		2p2c	12067.5024	9984.05268	14723.6076	17319.1128
10	1 AL	TRUE	Montgomery, AL MSA	Autauga County		2p3c	15257.1504	12189.7704	14994.6	20241.1872
11	1 AL	TRUE	Montgomery, AL MSA	Autauga County		2p4c	15257.1504	14917.3584	15064.2636	23163.2652
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		1p0c	8616	3714.29484	10731.65256	5593.47984
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		1p1c	11064	5473.96836	11522.93844	8444.00688
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		1p2c	11064	8020.27812	12869.3352	11294.53344
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		1p3c	14988	10699.404	13452.9648	14145.0612
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		1p4c	14988	13096.794	13773.354	16995.588
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		2p0c	8676	6809.54076	12838.26	11186.95968
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		2p1c	11064	8475.15888	14214.2784	14037.486
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		2p2c	11064	10733.6066	14768.1084	16888.014
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		2p3c	14988	13104.918	15071.3112	19738.5408
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County		2p4c	14988	16037.2776	15174.9828	22589.0664
22	3 AL	FALSE	Barbour County, AL	Barbour County		1p0c	5856	3237.03924	10890.72876	5686.79004
23	3 AL	FALSE	Barbour County, AL	Barbour County		1p1c	7776	4770.609	11436.48264	8495.9568
24	3 AL	FALSE	Barbour County, AL	Barbour County		1p2c	7776	6989.73852	12036.7944	11305.12356
25	3 AL	FALSE	Barbour County, AL	Barbour County		1p3c	9672	9324.6204	12404.508	14114.2908
26	3 AL	FALSE	Barbour County, AL	Barbour County		1p4c	9672	11413.9658	12530.8248	16923.4572
27	3 AL	FALSE	Barbour County, AL	Barbour County		2p0c	5904	5934.57168	12711.6432	11373.58008
28	3 AL	FALSE	Barbour County, AL	Barbour County		2p1c	7776	7386.17208	13271.94	14182.746
29	3 AL	FALSE	Barbour County, AL	Barbour County		2p2c	7776	9354.42768	13611.864	16991.9136
30	3 AL	FALSE	Barbour County, AL	Barbour County		2p3c	9672	11421.0462	13720.7796	19801.0812
31	3 AL	FALSE	Barbour County, AL	Barbour County		2p4c	9672	13976.622	13639.788	22610.2476
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County		1p0c	7973.92164	3050.28684	11446.48464	5845.47984
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County		1p1c	9779.52168	4495.38168	12233.8776	8821.218
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County		1p2c	9779.52168	6586.48536	13566.48	11796.9558
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County		1p3c	12717.2832	8786.66232	14094.588	14772.6948
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County		1p4c	12717.2832	10755.4687	14358.126	17748.432

After:

Once the repeated word has been removed, it now displays only the county name.

A	B	C	D	E	F	G	H	I	J	K
1	case_id	stateisMetro	areaname	county	County	family_member_cour	housing_cost	food_cost	transportation_co	healthcare_cos
2	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	1p0c	8505.72876	3454.91712	10829.16876	5737.47984
3	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	1p1c	12067.5024	5091.70788	11588.19288	8659.5564
4	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	1p2c	12067.5024	7460.20308	12361.7772	11581.6326
5	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	1p3c	15257.1504	9952.23924	13452.186	14503.7076
6	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	1p4c	15257.1504	12182.214	13744.5984	17425.7856
7	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	2p0c	10180.2942	6334.01436	12861.8868	11474.95968
8	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	2p1c	12067.5024	7883.31888	13589.112	14397.0372
9	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	2p2c	12067.5024	9984.05268	14723.6076	17319.1128
10	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	2p3c	15257.1504	12189.7704	14994.6	20241.1872
11	1 AL	TRUE	Montgomery, AL MSA	Autauga County	Autauga	2p4c	15257.1504	14917.3584	15064.2636	23163.2652
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	1p0c	8616	3714.29484	10731.65256	5593.47984
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	1p1c	11064	5473.96836	11522.93844	8444.00688
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	1p2c	11064	8020.27812	12869.3352	11294.53344
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	1p3c	14988	10699.404	13452.9648	14145.0612
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	1p4c	14988	13096.794	13773.354	16995.588
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	2p0c	8676	6809.54076	12838.26	11186.95968
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	2p1c	11064	8475.15888	14214.2784	14037.486
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	2p2c	11064	10733.6066	14768.1084	16888.014
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	2p3c	14988	13104.918	15071.3112	19738.5408
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin County	Baldwin	2p4c	14988	16037.2776	15174.9828	22589.0664
22	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	1p0c	5856	3237.03924	10890.72876	5686.79004
23	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	1p1c	7776	4770.609	11436.48264	8495.9568
24	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	1p2c	7776	6989.73852	12036.7944	11305.12356
25	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	1p3c	9672	9324.6204	12404.508	14114.2908
26	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	1p4c	9672	11413.9658	12530.8248	16923.4572
27	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	2p0c	5904	5934.57168	12711.6432	11373.58008
28	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	2p1c	7776	7386.17208	13271.94	14182.746
29	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	2p2c	7776	9354.42768	13611.864	16991.9136
30	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	2p3c	9672	11421.0462	13720.7796	19801.0812
31	3 AL	FALSE	Barbour County, AL	Barbour County	Barbour	2p4c	9672	13976.622	13639.788	22610.2476
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	Bibb	1p0c	7973.92164	3050.28684	11446.48464	5845.47984
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	Bibb	1p1c	9779.52168	4495.38168	12233.8776	8821.218
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	Bibb	1p2c	9779.52168	6586.48536	13566.48	11796.9558
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	Bibb	1p3c	12717.2832	8786.66232	14094.588	14772.6948
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb County	Bibb	1p4c	12717.2832	10755.4687	14358.126	17748.432

3.2. Separating Value from one column to two column

Before Column Name: Family Member Count

After Cleaning Column Name: Adult_count

Before:

The “Family Member Count” column contains two types of values: "p" indicates the number of adults, and "c" indicates the number of children.

case_id	state	isMetro	areaname	County	Family_member_count	housing_cost	food_cost	transportation_co	healthcare	co_other_necessities	co_childcare	costtaxes	total
2	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	8505.72876	3454.91712	10820.16876	5737.47984	4333.81344	0	6393.39	
3	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	12067.5024	5091.70788	11588.19288	8659.5564	6217.45896	6147.8298	7422.57	
4	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	12067.5024	7460.20308	12361.772	11581.6326	7075.65816	15824.694	9770.76	
5	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	15257.1504	9952.23924	13452.186	14503.7076	9134.3562	18802.1892	13102.94	
6	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13469.1	
7	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	10180.2942	6334.01436	12861.8868	11474.59586	5983.78524	0	8237.55	
8	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	12067.5024	7883.31888	13589.112	14397.0372	7228.96944	6147.8298	9460.70	
9	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	12067.5024	9984.05268	14723.6076	17319.1128	7990.1484	15824.694	11169.89	
10	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	15257.1504	12189.7704	14994.6	20241.1872	9945.10176	18802.1892	13210.104	
11	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	15257.1504	14917.3584	15064.2636	23163.2652	10933.41504	18802.1892	13417.111	
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	8616	3714.29484	10731.65256	5593.47984	4467.7518	0	6456.39	
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	11064	5473.96836	11522.93844	8444.00688	5992.35828	5962.7142	7097.55	
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	11064	8020.27812	12869.3352	11294.53344	6914.98608	15348.1992	9478.74	
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	14988	10699.404	13452.9648	14145.0612	9307.55928	18236.04	12998.93	
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	14988	13096.794	13773.354	16995.588	10176.22776	18236.04	13434.10	
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	8676	6809.54076	12838.26	11186.95968	5611.02168	0	7820.52	
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	11064	8475.15888	14214.2784	14037.4486	7079.8074	5962.7142	9341.70	
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	11064	10733.6066	14768.1084	16888.014	7898.13276	15348.1992	10867.87	
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	14988	13104.918	15071.3112	19738.5408	10179.1728	18236.04	13173.104	
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	14988	16037.2776	15174.9828	25899.0664	11241.68184	18236.04	13462.111	
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	5856	3237.03924	10890.72876	5686.79004	3294.7668	0	5458.3	
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	7776	4770.609	11436.48264	8495.9568	4546.13124	4846.73616	5426.47	
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	7776	6989.73852	12036.7944	11305.12356	5350.02096	11644.67508	6235.61	
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	9672	9324.6204	12404.508	14114.2908	6883.22532	13736.3484	7543.7	
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	9672	11413.9658	12530.8248	16923.4572	7640.27712	13736.3484	7204.79	
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	5904	5934.57168	12711.6432	11375.8008	4289.58144	0	6632.4	
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	7776	7386.17208	13271.94	14182.746	5493.85332	4846.73616	7386.60	
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	7776	9354.42768	13611.864	16991.9136	6207.02928	11644.67508	8052.73	
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	9672	11421.0462	13720.7796	19801.0812	7642.84272	13736.3484	8714.84	
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	9672	13976.622	13639.788	22610.2476	8568.82836	13736.3484	8254.90	
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p0c	7973.92164	3050.28684	11446.48464	5845.47984	3994.50552	0	6261		
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p1c	9779.52168	4495.38168	12233.8776	8821.218	5172.36072	5360.56824	6450.52		
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p2c	9779.52168	6586.48536	13566.48	11796.9558	5930.05008	13798.2588	8121.69		
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p3c	12717.2832	8786.66232	14094.588	14772.6948	7791.72732	16394.4708	10570.8		
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p4c	12717.2832	10755.4687	14358.126	17748.432	8505.10332	16394.4708	10692		

For analysis purposes, we need to separate this value into Adult_count and Child_count.

- Number of adult(Adult_count):

G2	A	B	C	D	E	F	Adult_count	Child_count	housing_cost	food_cost	transportation_co	healthcare	co_other_necessities
							1		8505.72876	3454.91712	10829.16876		
									12067.5024	5091.70788	11588.19288		
									12067.5024	7460.20308	12361.772		
									15257.1504	9952.23924	13452.186		
									15257.1504	12182.214	13744.5984		
									10180.2942	6334.01436	12861.8868		
									12067.5024	7883.31888	13589.112		
									12067.5024	9984.05268	14723.6076		
									15257.1504	12189.7704	14994.6		
									15257.1504	14917.3584	15064.2636		
									8616	3714.29484	10731.65256		
									11064	5473.96836	11522.93844		
									11064	8020.27812	12869.3352		
									14988	10699.404	13452.9648		
									14988	13096.794	13773.354		
									8676	6809.54076	12838.26		
									11064	8475.15888	14214.2784		
									11064	10733.6066	14768.1084		
									14988	13104.918	15071.3112		
									14988	16037.2776	15174.9828		
									5856	3237.03924	10890.72876		
									7776	4770.609	11436.48264		
									7776	6989.73852	12036.7944		
									9672	9324.6204	12404.508		
									9672	11413.9658	12530.8248		
									5904	5934.57168	12711.6432		
									7776	7386.17208	13271.94		
									9672	11421.0462	13720.7796		
									9672	13976.622	13639.788		
									7973.92164	3050.28684	11446.48464		
									9779.52168	4495.38168	12233.8776		
									9779.52168	6586.48536	13566.48		
									12717.2832	8786.66232	14094.588		
									12717.2832	10755.4687	14358.126		

- FIND("p", F2): This part finds where the letter "p" is in the text of cell F2.
- MID(F2, 1, FIND("p", F2) - 1):** This extracts the part of the text in F2 before the "p."
- VALUE(...): Tries to turn the extracted text into a number. If the text has numbers, it turns them into a numeric format.

- IFERROR(..., ""): Checks for errors. If there is an error (like if there are no numbers before the "p"), it shows an empty space instead of an error.

So, basically, this whole thing takes the numbers from the beginning of the text in F2 until it hits the "p." If there's an issue (no numbers before "p"), it just gives an empty space.

After:

Now, the "Adult_count" column contains the numeric value before the letter "p" from the original text.

A	B	C	D	E	F	G	H	I	J	K	L
case_id	state	isMetro	areaname	County	Family_member_count	Adult_count	Child_count	housing_cost	food_cost	transportation_co	healthcare_cos
2	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1		8505.72876	3454.91712	10829.16876	5737.47984
3	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1		12067.5024	5091.70788	11588.19288	8659.5564
4	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1		12067.5024	7460.20308	12361.7772	11581.6326
5	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1		15257.1504	9952.23924	13452.186	14503.7076
6	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1		15257.1504	12182.214	13744.5984	17425.7856
7	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2		10180.2942	6324.01436	12861.8868	11474.59568
8	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2		12067.5024	7883.31888	13589.112	14397.0372
9	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2		12067.5024	9984.05268	14723.6076	17319.1128
10	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2		15257.1504	12189.7704	14994.6	20241.1872
11	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2		15257.1504	14917.3584	15064.2636	23163.2652
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1		8616	3714.29484	10731.65256	5593.47984
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1		11064	5473.96836	11522.93844	8444.00688
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1		11064	8020.27812	12869.3352	11294.53344
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1		14988	10699.404	13452.9648	14145.0612
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1		14988	13096.794	13773.354	16995.588
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2		8676	6809.54076	12838.26	11186.95968
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2		11064	8475.15888	14214.2784	14037.486
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2		11064	10733.6066	14768.1084	16888.014
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2		14988	13104.918	15071.3112	19738.5408
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2		14988	16037.2776	15174.9828	22589.0664
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	1		5856	3237.03924	10890.72876	5686.79004
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	1		7776	4770.609	11436.48264	8495.9568
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	1		7776	6989.73852	12036.7944	11305.12356
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	1		9672	9324.6204	12404.508	14114.2908
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	1		9672	11413.9658	12530.8248	16923.4572
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	2		5904	5934.57168	12711.6432	11373.58008
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	2		7776	7386.17208	13271.94	14182.746
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	2		7776	9354.42768	13611.864	16991.9136
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	2		9672	11421.0462	13720.7796	19801.0812
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	2		9672	13976.622	13639.788	22610.2476
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p0c	1			7973.92164	3050.28684	11446.48464	5845.47984
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p1c	1			9779.52168	4495.38168	12233.8776	8821.218
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p2c	1			9779.52168	6586.48536	13566.48	11796.9558
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p3c	1			12717.2832	8786.66222	14094.588	14772.6948
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p4c	1			12717.2832	10755.4687	14358.126	17748.432

- Number of Childs(Child_count):

Before Column Name: Family Member Count

After Cleaning Column Name: Child_count

Before:

case_id	state	isMetro	areaname	County	Family_member_count	Adult_count	Child_count	housing_cost	food_cost	transportation_co	healthcare	cosothe
2	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1		8505.72876	3454.91712	10829.16876	5737.47984	
3	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1		12067.5024	5091.70788	11588.19288	8659.5564	
4	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1		12067.5024	7460.20308	12361.7772	11581.6326	
5	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1		15257.1504	9952.23924	13452.186	14503.7076	
6	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1		15257.1504	12182.214	13744.5984	17425.7856	
7	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2		10180.2942	6334.01436	12861.8866	11474.95968	
8	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2		12067.5024	7883.31888	13589.112	14397.0372	
9	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2		15257.1504	12189.7704	14994.6	20241.1872	
10	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2		15257.1504	14917.3584	15064.2636	23163.2652	
11	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2		8616	3714.29484	10731.65256	5593.47984	
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1		11064	5473.96836	11522.93844	8444.00688	
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1		11064	8020.27812	12869.3352	11294.53344	
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1		14988	10699.404	13452.9648	14145.0612	
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1		14988	13096.794	13773.354	16995.588	
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1		8676	6809.54076	12838.26	11186.95968	
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2		11064	8475.15888	14214.2784	14037.486	
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2		11064	10733.6066	14768.1084	16888.014	
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2		14988	13104.918	15071.3112	19738.5408	
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2		14988	16037.2776	15174.9828	22589.0664	
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2		5856	3237.03924	10890.72876	5686.79004	
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	1		7776	4770.609	11436.48264	8495.9568	
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	1		7776	6989.73852	12036.7944	11305.12356	
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	1		9672	9324.6204	12404.508	14114.2908	
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	1		9672	11413.9658	12530.8248	16923.4572	
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	1		5904	5934.57168	12711.6432	11373.58008	
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	2		7776	7386.17208	13271.94	14182.746	
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	2		7776	9354.42768	13611.864	16991.9136	
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	2		9672	11421.0462	13720.7996	19801.0812	
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	2		9672	13976.622	13639.788	22610.2476	
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	2		7973.92164	3050.28684	11446.48464	5845.47984	
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p0c	1		9779.52168	4495.38168	12233.8776	8821.218	
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p1c	1		9779.52168	6586.48536	13566.48	11796.9558	
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p2c	1		12717.2832	8786.66232	14094.588	14772.6948	
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p3c	1		12717.2832	10755.4687	14358.126	17748.432	
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p4c	1						

After:

The number of children has been separated from the "Family_member_count" column and placed in a new column called "Child_count."

case_id	state	isMetro	areaname	County	Family_member_count	Adult_count	Child_count	housing_cost	food_cost	transportation_co	healthcare	cosothe
2	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1	0	8505.72876	3454.91712	10829.16876	5737.47984	
3	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1	1	12067.5024	5091.70788	11588.19288	8659.5564	
4	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1	1	12067.5024	7460.20308	12361.7772	11581.6326	
5	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1	1	15257.1504	9952.23924	13452.186	14503.7076	
6	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1	1	15257.1504	12182.214	13744.5984	17425.7856	
7	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2	2	10180.2942	6334.01436	12861.8866	11474.95968	
8	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2	2	12067.5024	7883.31888	13589.112	14397.0372	
9	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2	2	12067.5024	9984.05268	14723.6076	17319.1128	
10	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2	2	15257.1504	12189.7704	14994.6	20241.1872	
11	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2	2	15257.1504	14917.3584	15064.2636	23163.2652	
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1	1	8616	3714.29484	10731.65256	5593.47984	
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1	1	11064	5473.96836	11522.93844	8444.00688	
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1	1	11064	8020.27812	12869.3352	11294.53344	
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1	1	14988	10699.404	13452.9648	14145.0612	
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1	1	14988	13096.794	13773.354	16995.588	
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2	2	8676	6809.54076	12838.26	11186.95968	
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2	2	11064	8475.15888	14214.2784	14037.486	
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2	2	11064	10733.6066	14768.1084	16888.014	
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2	2	14988	13104.918	15071.3112	19738.5408	
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2	2	14988	16037.2776	15174.9828	22589.0664	
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	1	1	5856	3237.03924	10890.72876	5686.79004	
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	1	1	7776	4770.609	11436.48264	8495.9568	
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	1	1	7776	6989.73852	12036.7944	11305.12356	
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	1	1	9672	9324.6204	12404.508	14114.2908	
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	1	1	9672	11413.9658	12530.8248	16923.4572	
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	2	2	5904	5934.57168	12711.6432	11373.58008	
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	2	2	7776	7386.17208	13271.94	14182.746	
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	2	2	7776	9354.42768	13611.864	16991.9136	
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	2	2	9672	11421.0462	13720.7996	19801.0812	
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	2	2	9672	13976.622	13639.788	22610.2476	
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p0c	1	1	7973.92164	3050.28684	11446.48464	5845.47984	
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p1c	1	1	9779.52168	4495.38168	12233.8776	8821.218	
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p2c	1	1	9779.52168	6586.48536	13566.48	11796.9558	
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p3c	1	1	12717.2832	8786.66232	14094.588	14772.6948	
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	Baldwin	1p4c	1	1	12717.2832	10755.4687	14358.126	17748.432	

- FIND("p", F2): Finds where the letter "p" is in the text of cell F2.
- FIND("c", F2): Finds where the letter "c" is in the text of cell F2.
- FIND("p", F2) + 1: Adjusts the starting position for the MID function to begin one character after "p".

- FIND("c", F2) - FIND("p", F2) - 1: Calculates the length of the substring to be extracted by measuring the distance between "p" and "c" and subtracting 1 to exclude "p."
- MID(F2, FIND("p", F2) + 1, FIND("c", F2) - FIND("p", F2) - 1): Extracts the characters between "p" and "c" in the text in cell F2.
- VALUE(...): Tries to turn the extracted text into a number. If there are numbers, it converts them into a numeric format.
- IFERROR(..., ""): Checks for errors. If there's an error (like if there are no numbers between "p" and "c"), it shows an empty space instead of an error.

This formula gets the numbers between "p" and "c" in the text of cell F2. If there's an issue (no numbers between "p" and "c"), it just gives an empty space.

A	B	C	D	E	F	G	H	I	J	K	L	
case_id	state	isMetro	areaname	County	Family_member_count	Adult_count	Child_count	housing_cost	food_cost	transportation_co	healthcare_co	other
2	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1	0	8505.72876	3454.91712	10829.16876	5737.47984	
3	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1	1	12067.5024	5091.70788	11588.19288	8659.5564	
4	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1	2	12067.5024	7460.20308	12361.7772	11581.6326	
5	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1	3	15257.1504	9952.23924	13452.186	14503.7076	
6	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1	4	15257.1504	12182.214	13744.5984	17425.7856	
7	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2	0	10180.2942	6334.01436	12861.8868	11747.95968	
8	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2	1	12067.5024	7883.31888	13589.112	14397.0372	
9	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2	2	12067.5024	9984.05268	14723.6076	17319.1128	
10	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2	3	15257.1504	12189.7704	14994.6	20241.1872	
11	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2	4	15257.1504	14917.3584	15064.2636	23163.2652	
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1	0	8616	3714.29484	10731.65256	5593.47984	
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1	1	11064	5473.96836	11522.93844	8444.00688	
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1	2	11064	8020.27812	12869.3352	11294.53344	
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1	3	14988	10699.404	13452.9648	14145.0612	
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1	4	14988	13096.794	13773.354	16995.588	
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2	0	8676	6809.54076	12838.26	11186.95968	
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2	1	11064	8475.15888	14214.2784	14037.486	
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2	2	11064	10733.6066	14768.1084	16888.014	
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2	3	14988	13104.918	15071.3112	19738.5408	
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2	4	14988	16037.2776	15174.9828	22589.0664	
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	1	0	5856	3237.03924	10890.72876	5686.79004	
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	1	1	7776	4770.609	11436.48264	8495.9568	
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	1	2	7776	6989.73852	12036.7944	11305.12356	
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	1	3	9672	9324.6204	12404.508	14114.2908	
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	1	4	9672	11413.9658	12530.8248	16923.4572	
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	2	0	5904	5934.57168	12711.6432	11373.58008	
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	2	1	7776	7386.17208	13271.94	14162.746	
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	2	2	7776	9354.42768	13611.864	16991.9136	
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	2	3	9672	11421.0462	13720.7796	19801.0812	
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	2	4	9672	13976.622	13639.788	22610.2476	
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p0c	1	0	7973.92164	3050.28684	11446.48464	5845.47984		
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p1c	1	1	1	9779.52168	4495.38168	12233.8776	8821.218	
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p2c	1	2	2	9779.52168	6586.48536	13566.48	11796.9558	
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p3c	1	3	3	12717.2832	8786.66232	14094.588	14772.6948	
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Are Bibb	1p4c	1	4	4	-12717.2832	10755.4687	14358.126	17748.432	

3.3. Creating Additional Columns Based on Existing Data

Column Name: Total_member

Before:

case_id	state	isMetro	areaname	County	Family_member_count	Adult_count	Child_count	Total_member	housing_cost	food_cost	transportation_co	healthcare	cosother_ne
2	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1	0	8505.72876	3454.91712	10829.16876	5737.47984		
3	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1	1	12067.5024	5091.70788	11588.19288	8659.5564		
4	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1	2	12067.5024	7460.20308	12361.7772	11581.6326		
5	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1	3	15257.1504	9952.23924	13452.186	14503.7076		
6	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1	4	15257.1504	12182.214	13744.5984	17425.7856		
7	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2	0	10180.2942	6334.01436	12861.8868	11474.95968		
8	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2	1	12067.5024	7883.31888	13589.112	14397.0372		
9	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2	2	12067.5024	9984.05268	14723.6076	17319.1128		
10	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2	3	15257.1504	12189.7704	14994.6	20241.1872		
11	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2	4	15257.1504	14917.3584	15064.2636	23163.2652		
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1	0	8616	3714.29484	10731.65256	5593.47984		
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1	1	11064	5473.96836	11522.93844	8444.00688		
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1	2	11064	8020.27812	12869.3352	11294.53344		
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1	3	14988	10699.404	13452.9648	14145.0612		
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1	4	14988	13096.794	13773.354	16995.588		
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2	0	8676	6809.54076	12838.26	11186.95968		
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2	1	11064	8475.15888	14214.2784	14037.486		
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2	2	11064	10733.6066	14768.1084	16888.014		
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2	3	14988	13104.918	15071.3112	19738.5408		
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2	4	14988	16037.2776	15174.9828	22589.0664		
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	1	0	5856	3237.03924	10890.72876	5686.79004		
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	1	1	7776	4770.609	11436.48264	8495.9568		
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	1	2	7776	6898.73852	12036.7944	11305.12356		
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	1	3	9672	9324.6204	12404.508	14114.2908		
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	1	4	9672	11413.9658	12530.8248	16923.4572		
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	2	0	5904	5934.57168	12711.6432	11373.58008		
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	2	1	7776	7386.17208	13271.94	14182.746		
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	2	2	7776	9354.42768	13611.864	16991.9136		
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	2	3	9672	13976.622	13639.788	22610.2476		
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	2	4	7973.92164	3050.28684	11446.48464	5845.47984		
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p0c	1	0	9779.52168	4495.38168	12233.8776	8821.218			
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p1c	1	1	9779.52168	6586.48536	13566.48	11796.9558			
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p2c	1	2	12717.2832	8786.66232	14094.588	14772.6948			
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p3c	1	3	12717.2832	10755.4687	14358.126	17748.432			
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p4c	1	4							

case_id	state	isMetro	areaname	County	Family_member_count	Adult_count	Child_count	Total_member	housing_cost	food_cost	transportation_co	healthcare	cosother_ne
2	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1	0	8505.72876	3454.91712	10829.16876	5737.47984		
3	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1	1	12067.5024	5091.70788	11588.19288	8659.5564		
4	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1	2	12067.5024	7460.20308	12361.7772	11581.6326		
5	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1	3	15257.1504	9952.23924	13452.186	14503.7076		
6	1 AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1	4	15257.1504	12182.214	13744.5984	17425.7856		
7	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2	0	10180.2942	6334.01436	12861.8868	11474.95968		
8	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2	1	12067.5024	7883.31888	13589.112	14397.0372		
9	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2	2	12067.5024	9984.05268	14723.6076	17319.1128		
10	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2	3	15257.1504	12189.7704	14994.6	20241.1872		
11	1 AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2	4	15257.1504	14917.3584	15064.2636	23163.2652		
12	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1	0	8616	3714.29484	10731.65256	5593.47984		
13	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1	1	11064	5473.96836	11522.93844	8444.00688		
14	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1	2	11064	8020.27812	12869.3352	11294.53344		
15	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1	3	14988	10699.404	13452.9648	14145.0612		
16	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1	4	14988	13096.794	13773.354	16995.588		
17	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2	0	8676	6809.54076	12838.26	11186.95968		
18	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2	1	11064	8475.15888	14214.2784	14037.486		
19	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2	2	11064	10733.6066	14768.1084	16888.014		
20	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2	3	14988	13104.918	15071.3112	19738.5408		
21	2 AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2	4	14988	16037.2776	15174.9828	22589.0664		
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	1	0	5856	3237.03924	10890.72876	5686.79004		
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	1	1	7776	4770.609	11436.48264	8495.9568		
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	1	2	7776	6898.73852	12036.7944	11305.12356		
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	1	3	9672	9324.6204	12404.508	14114.2908		
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	1	4	9672	11413.9658	12530.8248	16923.4572		
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	2	0	5904	5934.57168	12711.6432	11373.58008		
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	2	1	7776	7386.17208	13271.94	14182.746		
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	2	2	7776	9354.42768	13611.864	16991.9136		
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	2	3	9672	13976.622	13639.788	22610.2476		
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	2	4	7973.92164	3050.28684	11446.48464	5845.47984		
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p0c	1	0	9779.52168	4495.38168	12233.8776	8821.218			
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p1c	1	1	9779.52168	6586.48536	13566.48	11796.9558			
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p2c	1	2	12717.2832	8786.66232	14094.588	14772.6948			
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p3c	1	3	12717.2832	10755.4687	14358.126	17748.432			
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p4c	1	4							

Creating a new column titled "Total_member" by summing the counts from "Adult_count" and "Child_count" to represent the total number of members in a family.

- Using the SUM() function to calculate the total number of family members by adding the counts from both "Adult_count" and "Child_count."

case_id	state	isMetro	areaname	County	Family_member_count	Adult_count	Child_count	Total_member	housing_cost	food_cost	transportation_co	healthcare_co	coother_nec	
2	AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1	0	1	8505.72876	3454.91712	10829.16876	5737.47984		
3	AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1	1	2	12067.5024	5091.70788	11588.19288	8659.5564		
4	AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1	2	3	12067.5024	7460.20308	12361.7772	11581.6326		
5	AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1	3	4	15257.1504	9952.23924	13452.186	14503.7076		
6	AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1	4	5	15257.1504	12182.214	13744.5984	17425.7856		
7	AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2	0	2	10180.2942	6334.01436	12861.8868	11474.95968		
8	AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2	1	3	12067.5024	7883.31888	13589.112	14397.0372		
9	AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2	2	4	4	12067.5024	9984.05268	14723.6076	17319.1128	
10	AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2	3	5	15257.1504	12189.7704	14994.6	20241.1872		
11	AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2	4	6	15257.1504	14917.3584	15064.2636	23163.2652		
12	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1	0	1	8616.3714	29484	10731.65256	5593.47984		
13	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1	1	2	11064.5473	96863	11522.93844	8444.00688		
14	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1	2	3	11064.5473	8020.27812	12869.3352	11294.53344		
15	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1	3	4	14988	10699.404	13452.9648	14145.0612		
16	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1	4	5	14988	13096.794	13773.354	16995.558		
17	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2	0	2	8676.6809	54076	12838.26	11186.95968		
18	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2	1	3	11064.8475	15888	14214.2784	14037.486		
19	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2	2	4	11064.1073	6066	14768.1084	16888.014		
20	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2	3	5	14988	13104.918	15071.3112	19738.5408		
21	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2	4	6	14988.1603	27776	15174.9828	22589.0664		
22	3 AL	FALSE	Barbour County, AL	Barbour	1p0c	1	0	1	5856	3237.03924	10890.72876	5686.79004		
23	3 AL	FALSE	Barbour County, AL	Barbour	1p1c	1	1	2	7776	4770.609	11436.48264	8495.9568		
24	3 AL	FALSE	Barbour County, AL	Barbour	1p2c	1	2	3	7776	6989.73852	12036.7944	11305.12356		
25	3 AL	FALSE	Barbour County, AL	Barbour	1p3c	1	3	4	9672	9324.6204	12404.508	14114.2908		
26	3 AL	FALSE	Barbour County, AL	Barbour	1p4c	1	4	5	9672	11413.9658	12530.8248	16923.4572		
27	3 AL	FALSE	Barbour County, AL	Barbour	2p0c	2	0	2	5904	5934.57168	12711.6432	11373.58008		
28	3 AL	FALSE	Barbour County, AL	Barbour	2p1c	2	1	3	7776	7386.17208	13271.94	14182.746		
29	3 AL	FALSE	Barbour County, AL	Barbour	2p2c	2	2	4	7776	9354.42768	13611.864	16991.9136		
30	3 AL	FALSE	Barbour County, AL	Barbour	2p3c	2	3	5	9672	11421.0462	13720.7796	19801.0812		
31	3 AL	FALSE	Barbour County, AL	Barbour	2p4c	2	4	6	9672	13976.622	13639.788	22610.2476		
32	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p0c	1	0	1	1	7973.92164	3050.28684	11446.48464	5845.47984		
33	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p1c	1	1	2	2	2979.52168	4495.38168	12233.8776	8821.218		
34	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p2c	1	2	3	3	9799.52168	6586.48536	13566.48	11796.9558		
35	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p3c	1	3	4	4	12717.2832	8786.66232	14094.588	14772.6948		
36	4 AL	TRUE	Birmingham-Hoover, AL HUD Metr Bibb	1p4c	1	4	5	5	12717.2832	1055.4687	14358.126	17748.432		
			cost of living us											

3.4. Check for a Blank Values:

A31431	B	C	D	E	F	G	H	I	J	K	L	M		
1	Case_id	State	isMetro	Areaname	County	Family_member_count	Adult_count	Child_count	Total_member	housing_cost	food_cost	transportation_co	healthcare_co	coother_nec
31407	3169	WY	FALSE	Uinta County, WY	Uinta	2p0c	2	0	2	7488	5839.46628	14231.4168	14466.5592	
31408	3169	WY	FALSE	Uinta County, WY	Uinta	2p1c	2	1	3	8808	7267.80396	15042.96	18086.2416	
31409	3169	WY	FALSE	Uinta County, WY	Uinta	2p2c	2	2	4	8808	9204.51636	15595.7256	21705.9228	
31410	3169	WY	FALSE	Uinta County, WY	Uinta	2p3c	2	3	5	12216	11238.0154	15883.5948	25325.604	
31411	3169	WY	FALSE	Uinta County, WY	Uinta	2p4c	2	4	6	12216	13752.6372	16603.2034	28945.2864	
31412	3170	WY	FALSE	Washakie County, WY	Washakie	1p0c	1	0	1	6864	3382.29084	11700.9192	7233.27984	
31413	3170	WY	FALSE	Washakie County, WY	Washakie	1p1c	1	1	2	8808	4984.67472	13023.6228	10852.9614	
31414	3170	WY	FALSE	Washakie County, WY	Washakie	1p2c	1	2	3	8808	7303.38132	13871.2632	14472.6432	
31415	3170	WY	FALSE	Washakie County, WY	Washakie	1p3c	1	3	4	8808	9444.16704	15102.69	18092.3244	
31416	3170	WY	FALSE	Washakie County, WY	Washakie	1p4c	1	4	5	13632	11560.3001	16017.2076	21712.008	
31417	3170	WY	FALSE	Washakie County, WY	Washakie	2p0c	2	0	2	7728	6200.8674	14501.9664	14466.5592	
31418	3170	WY	FALSE	Washakie County, WY	Washakie	2p1c	2	1	3	8808	7717.60332	15298.08	18086.2416	
31419	3170	WY	FALSE	Washakie County, WY	Washakie	2p2c	2	2	4	8808	9774.17796	15850.666	21705.9228	
31420	3170	WY	FALSE	Washakie County, WY	Washakie	2p3c	2	3	5	12360	11933.5283	16145.1036	25325.604	
31421	3170	WY	FALSE	Washakie County, WY	Washakie	2p4c	2	4	6	12360	14603.7972	16892.4468	28945.2864	
31422	3173	WY	FALSE	Weston County, WY	Weston	1p0c	1	0	1	8256	3278.53968	12688.5	12332.72398	
31423	3173	WY	FALSE	Weston County, WY	Weston	1p1c	1	1	2	10956	4821.70996	13632.6992	10852.9614	
31424	3173	WY	FALSE	Weston County, WY	Weston	1p2c	1	2	3	10956	7079.35176	14513.4696	14472.6432	
31425	3173	WY	FALSE	Weston County, WY	Weston	1p3c	1	3	4	13632	9444.16704	15102.69	18092.3244	
31426	3173	WY	FALSE	Weston County, WY	Weston	1p4c	1	4	5	13632	11560.3001	16017.2076	21712.008	
31427	3173	WY	FALSE	Weston County, WY	Weston	2p0c	2	0	2	7728	6200.8674	14501.9664	14466.5592	
31428	3173	WY	FALSE	Weston County, WY	Weston	2p1c	2	1	3	8808	7717.60332	15298.08	18086.2416	
31429	3173	WY	FALSE	Weston County, WY	Weston	2p2c	2	2	4	8808	9774.17796	15850.666	21705.9228	
31430	3173	WY	FALSE	Weston County, WY	Weston	2p3c	2	3	5	12360	11933.5283	16145.1036	25325.604	
31431	3173	WY	FALSE	Weston County, WY	Weston	2p4c	2	4	6	12360	14603.7972	16892.4468	28945.2864	
31432	3171	WY	FALSE	Weston Cou. Weston	Weston	1p0c	1	0	1	8256	3278.53968	12688.5	12332.72398	
31433	3171	WY	FALSE	Weston Cou. Weston	Weston	1p1c	1	1	2	10956	4831.77096	13636.6992	10852.9614	
31434	3171	WY	FALSE	Weston Cou. Weston	Weston	1p2c	1	2	3	10956	7079.35176	14513.4696	14472.6432	
31435	3171	WY	FALSE	Weston Cou. Weston	Weston	1p3c	1	3	4	13632	9444.16704	15102.69	18092.3244	
31436	3171	WY	FALSE	Weston Cou. Weston	Weston	1p4c	1	4	5	13632	11560.3001	16017.2076	21712.008	
31437	3171	WY	FALSE	Weston Cou. Weston	Weston	2p0c	2	0	2	8316	6010.65672	14790.3624	14466.5592	
31438	3171	WY	FALSE	Weston Cou. Weston	Weston	2p1c	2	1	3	8808	7480.86696	15611.588	18086.2416	
31439	3171	WY	FALSE	Weston Cou. Weston	Weston	2p2c	2	2	4	8808	9474.35748	16163.9028	21705.9228	
31440	3171	WY	FALSE	Weston Cou. Weston	Weston	2p3c	2	3	5	13632	11567.4697	17118.384	24094.2864	
31441	3171	WY	FALSE	Weston Cou. Weston	Weston	2p4c	2	4	6	13632	14155.8108	17184.3492	10068.61968	
31442	0	0	0	0	0	0	0	0	0	0	0	0	0	
31443	0	0	0	0	0	0	0	0	0	0	0	0	10	

3.5. Renaming the column header:

During the data cleaning process, inconsistencies in column names were identified, with some names appearing in uppercase and others in lowercase. To standardize naming conventions and facilitate data manipulation and error prevention, all column names were renamed.

Before:

A	B	C	D	E	F	G	H	I	K	M	N	O	P	R					
1	Case_id	State	isMetro	Areaname	County	Family_size	Adult_count	Child_count	Total_member	housing_cost	food_cost	transportation_co	healthcare_co	other_necessities_co	childcare_cost	taxes	total_cost	median_family_income	
2	1 AL	TRUE		Montgomery Autauga	1p0c	1	0		18029.16876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	73010.41406		
3	1 AL	TRUE		Montgomery Autauga	1p1c	1	1		12067.5024	5091.70788	11588.19288	8659.5564	6147.8298	7422	57194.3256	73010.41406			
4	1 AL	TRUE		Montgomery Autauga	1p2c	1	2		12067.5024	5091.70788	12361.7772	11581.0320	6217.45896	7095.6810	11584.694	9711.71408	73010.41406		
5	1 AL	TRUE		Montgomery Autauga	1p3c	1	3		15257.1504	9852.23924	13452.186	14503.7076	9134.3562	18802.1892	13102	94203.5328	73010.41406		
6	1 AL	TRUE		Montgomery Autauga	1p4c	1	4		15257.1504	12181.214	13745.5084	17425.7856	9942.36306	18802.1892	13469	100813.52	73010.41406		
7	1 AL	TRUE		Montgomery Autauga	2p0c	2	0		20180.2942	6334.01436	12861.8868	14744.95068	5983.78524	0	8237	55071.6684	73010.41406		
8	1 AL	TRUE		Montgomery Autauga	2p1c	2	1		12067.5024	7883.31888	13899.112	14397.0372	7228.96044	6147.8298	9460	70773.6744	73010.41406		
9	1 AL	TRUE		Montgomery Autauga	2p2c	2	2		4	12067.5024	9984.05268	14723.6076	17318.1128	7990.1484	15824.694	11169	89077.8696	73010.41406	
10	1 AL	TRUE		Montgomery Autauga	2p3c	2	3		5	15257.1504	12180.7704	14994.6	20241.1872	9945.10176	18802.1892	13210	104640.1524	73010.41406	
11	1 AL	TRUE		Montgomery Autauga	2p4c	2	4		6	15257.1504	14917.3584	15064.2636	21613.2652	10933.41504	18802.1892	13417	111554.8596	73010.41406	
12	2 AL	TRUE		Daphne Fair Baldwin	1p0c	1	0		1	8616	3714.29484	10731.65256	5593.47984	4467.7518	0	6456	39578.8944	77884.75781	
13	2 AL	TRUE		Daphne Fair Baldwin	1p1c	1	1		2	11064	5473.96836	8444.00688	5992.35828	5962.7142	7097	55556.5596	77884.75781		
14	2 AL	TRUE		Daphne Fair Baldwin	1p2c	1	2		3	11064	8020.27812	12869.3352	11294.53344	6914.98608	15348.1992	9478	74988.9672	77884.75781	
15	2 AL	TRUE		Daphne Fair Baldwin	1p3c	1	3		4	14988	10699.404	13452.29648	14145.0612	9307.55928	18236.04	12998	93826.8756	77884.75781	
16	2 AL	TRUE		Daphne Fair Baldwin	2p0c	1	4		5	14988	13095.794	13733.354	16999.588	10176.22776	18236.04	13434	100699.524	77884.75781	
17	2 AL	TRUE		Daphne Fair Baldwin	2p1c	2	0		6	8676	6809.54076	12838.226	11186.95968	5611.02168	0	7820	52941.5856	77884.75781	
18	2 AL	TRUE		Daphne Fair Baldwin	2p2c	2	1		7	11064	8476.15888	14214.2784	14037.486	7078.8074	5962.7142	9341	70174.8576	77884.75781	
19	2 AL	TRUE		Daphne Fair Baldwin	2p3c	2	2		8	11064	10733.6066	7898.13276	14998.1084	16808.014	7898.13276	5962.7142	10867	87567.2868	77884.75781
20	2 AL	TRUE		Daphne Fair Baldwin	2p4c	2	3		9	14988	13104.918	15070.112	15945.408	10174.0728	18236.04	13173	104990.8316	77884.75781	
21	2 AL	TRUE		Daphne Fair Baldwin	3p0c	2	4		10	14988	16071.2770	15903.409	18236.04	22349.05908	6217.45896	111728.7159	77884.75781		
22	3 AL	FALSE		Barbour Coi Barbour	1p0c	0	0		11	50891	7289	10809.7289	8486.9568	4546.13124	4846.73616	5426	42797.4288	4822.73591	
23	3 AL	FALSE		Barbour Coi Barbour	1p1c	1	1		12	7776	4770.609	11374.584	8495.5568	5983.78524	13736.3484	7543	73678.348	4822.73591	
24	3 AL	FALSE		Barbour Coi Barbour	1p2c	1	2		13	7776	6889.73852	12036.7944	11305.12356	5350.2096	16644.73678	6235	61337.8476	4822.73591	
25	3 AL	FALSE		Barbour Coi Barbour	1p3c	1	3		14	9672	8324.6204	12404.508	14114.2808	6883.22532	13736.3484	7204	79120.8168	4822.73591	
26	3 AL	FALSE		Barbour Coi Barbour	1p4c	1	4		15	9672	11413.9658	12530.8248	16912.4572	7640.27712	13736.3484	7204	12822.73591	4822.73591	
27	3 AL	FALSE		Barbour Coi Barbour	2p0c	2	0		16	5094	5394.57168	12721.6432	11373.58008	4289.51844	0	6632	46985.492	4822.73591	
28	3 AL	FALSE		Barbour Coi Barbour	2p1c	2	1		17	7776	7386.17208	13271.94	14182.746	5493.85332	4846.73616	7386	60343.7112	4822.73591	
29	3 AL	FALSE		Barbour Coi Barbour	2p2c	2	2		30	7776	9354.42768	13611.864	16991.9136	6207.02928	16644.67508	8052	73638.2052	4822.73591	
31	3 AL	FALSE		Barbour Coi Barbour	2p3c	2	3		32	9672	11421.0462	13720.7796	19801.0812	7642.84272	13736.3484	8714	84708.5916	4822.73591	
33	4 AL	TRUE		Birmingham Bibb	1p0c	1	0		34	1773.92164	3050.28684	14466.48464	5845.47984	3994.50552	17172.36072	6450	38571.75	59443.9882	
34	4 AL	TRUE		Birmingham Bibb	1p1c	1	1		35	9779.51268	4495.38168	12233.8776	8821.218	5172.36072	5360.56824	8537	66115.8636	59443.9882	
35	4 AL	TRUE		Birmingham Bibb	1p2c	1	2		36	9779.51268	6586.48536	13566.488	11795.9558	5930.05080	13798.2588	8121	69578.5728	59443.9882	
36	4 AL	TRUE		Birmingham Bibb	1p3c	1	3		37	12171.2832	10762.1389	15486.2176	20618.1744	8507.50204	16394.4708	10934	95418.6264	59443.9882	
37	4 AL	TRUE		Birmingham Bibb	2p0c	2	0		38	12171.2832	13170.796	15526.3284	23593.9116	9380.08452	16394.4708	10936	101718.1752	59443.9882	
39	4 AL	TRUE		Birmingham Bibb	2p1c	2	1		39	14988	16037.72776	11289.72786	13474.5876	9307.55928	13736.3484	7204	11727.7323	59443.9882	
40	4 AL	TRUE		Birmingham Bibb	2p2c	2	2		40	14988	16037.72776	11290.72786	13474.5876	9308.08452	13736.3484	7204	11727.7323	59443.9882	
41	4 AL	TRUE		Birmingham Bibb	2p3c	2	3		42	12171.2832	10762.1389	15485.2176	20618.1744	8507.50204	16394.4708	10934	95418.6264	59443.9882	
42	4 AL	TRUE		Birmingham Bibb	2p4c	2	4		43	12171.2832	13170.796	15526.3284	23593.9116	9380.08452	16394.4708	10936	101718.1752	59443.9882	
43	5 AL	TRUE		Birmingham Blount	1p0c	1	0		44	1	7246.05684	3257.8984	11329.07664	5845.47984	3805.9578	0	6063	37547.3496	63966.12801
44	5 AL	TRUE		Birmingham Blount	1p1c	1	1		45	9886.84084	4801.1808	13168.7668	8831.319	4060.71304	5119.81588	6173	40937.0413	63066.12801	

After:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
1	=PROPER(A2)																	
2	Case_id	State	isMetro	Areaname	County	Family_size	Adult_count	Child_count	Total_member	housing_cost	food_cost	transportation_co	healthcare_co	other_necessities_co	childcare_cost	taxes	total_cost	median_family_income
3	1 AL	TRUE		Montgomery Autauga	1p0c	1	0		1	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	73010.41406
4	1 AL	TRUE		Montgomery Autauga	1p1c	1	1		2	12067.5024	5091.70788	11588.19288	8659.5564	6147.8298	7422	57194.3256	73010.41406	
5	1 AL	TRUE		Montgomery Autauga	1p2c	1	2		3	12067.5024	7460.20308	12361.7772	11581.0320	6217.45896	6147.8298	7422	57194.3256	73010.41406
6	1 AL	TRUE		Montgomery Autauga	1p3c	1	3		4	15257.1504	9852.23924	13452.186	14503.7076	9134.3562	18802.1892	13102	94203.5328	73010.41406
7	1 AL	TRUE		Montgomery Autauga	2p0c	2	0		5	15257.1504	12180.7704	13744.5876	17425.7856	9942.36306	18802.1892	13469	111554.8596	73010.41406
8	1 AL	TRUE		Montgomery Autauga	2p1c	2	1		6	10810.2942	6334.01436	12861.8868	14214.2784	5983.78524	0	8237	55070.6884	73010.41406
9	1 AL	TRUE		Montgomery Autauga	2p2c	2	2		7	10810.2942	8495.38188	14214.2784	17425.7856	9942.36306	18802.1892	13469	110823.52	73010.41406
10	1 AL	TRUE		Montgomery Autauga	2p3c	2	3		8	14988	16071.2770	15073.8138	17425.7856	9942.36306	18802.1892	13469	111728.7159	77884.75781
11	1 AL	TRUE		Daphne Fair Baldwin	1p0c	1	0		9	10810.2942	3237.084	10809.7289	8486.9568	4546.13124	4846.73616	5426	42797.4288	4822.73591
12	1 AL	TRUE		Daphne Fair Baldwin	1p1c	1	1		10	15257.1504	14917.3584	14094.2636	18178.4096	9942.36306	18802.1892	13469	10464.4086	73010.41406
13	2 AL	TRUE		Daphne Fair Baldwin	1p2c	1	2		11	15257.1504	12180.7704	13452.186	14503.7076	9134.3562	18802.1892	13102	10544.6596	73010.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S		
1	Case_Id	State	IsMetro	Areaname	County	Family_size	Member_Count	Adult_Count	Child_Count	Total_member	housing_cost	food_cost	transportation_co	healthcare_cost	other_necessities	co_childcare	costtaxes	total_cost	median_family_income	
2	Case_Id	State	IsMetro	Areaname	County	Family_size	Member_Count	Adult_Count	Child_Count	Total_member	housing_cost	food_cost	transportation_co	healthcare_cost	other_necessities	co_childcare	costtaxes	total_cost	median_family_income	
3	1	AL	TRUE	Montgomery	Autauga	1p0c	1	0	1	2	12067.5024	5091.70788	11588.19288	8659.5564	6217.45896	6147.8298	7422	57194.3256	73010.41406	
4	1	AL	TRUE	Montgomery	Autauga	1p1c	1	1	0	3	12067.5024	7460.20308	12361.7772	11581.6326	7075.65816	15824.694	9770	76141.0308	73010.41406	
5	1	AL	TRUE	Montgomery	Autauga	1p2c	1	2	1	4	15257.1504	9952.23924	13452.186	14503.7076	9134.3562	18802.1892	13102	94203.5328	73010.41406	
6	1	AL	TRUE	Montgomery	Autauga	1p3c	1	3	4	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13469	100823.52	73010.41406		
7	1	AL	TRUE	Montgomery	Autauga	1p4c	1	4	5	15257.1504	6334.01436	12861.8868	11747.95968	5983.78524	0	8237	55071.6684	73010.41406		
8	1	AL	TRUE	Montgomery	Autauga	2p0c	2	0	2	2	10180.2942	6334.01436	12861.8868	11747.95968	5983.78524	0	8237	55071.6684	73010.41406	
9	1	AL	TRUE	Montgomery	Autauga	2p1c	2	1	3	3	12067.5024	7883.31888	13564.112	14397.0372	7228.96944	6147.8298	9460	70773.6744	73010.41406	
10	1	AL	TRUE	Montgomery	Autauga	2p2c	2	2	4	4	12067.5024	9984.05268	14723.36076	17319.1128	7990.1484	15824.694	11169	89077.8696	73010.41406	
11	1	AL	TRUE	Montgomery	Autauga	2p3c	2	3	5	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13469	100823.52	73010.41406		
12	1	AL	TRUE	Montgomery	Autauga	2p4c	2	4	6	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13471	11554.0886	73010.41406		
13	2	AL	TRUE	Daphne	Fair_Baldwin	1p0c	1	0	1	8	8616.3734	2194.2984	15004.1638	2163.0552	10231.41504	9405.4469	10731.15704	73010.41406		
14	2	AL	TRUE	Daphne	Fair_Baldwin	1p1c	1	1	2	9	11064.5473	9638.6	11552.93844	8444.00688	5992.35828	5962.7142	7097	55554.5956	73084.75781	
15	2	AL	TRUE	Daphne	Fair_Baldwin	1p2c	1	2	3	10	11064.8020	8781.27812	12869.3352	11294.5334	6014.98608	15348.1992	9478	74988.9672	73084.75781	
16	2	AL	TRUE	Daphne	Fair_Baldwin	1p3c	1	3	11	14988.10699	404	13452.29648	1415.0612	9307.55928	18236.04	12998	93826.8756	73084.75781		
17	2	AL	TRUE	Daphne	Fair_Baldwin	1p4c	1	4	12	14988.13099	794	13771.354	10880.27924	10880.72876	10880.72876	10880.72876	10880.72876	10880.72876	73084.75781	
18	2	AL	TRUE	Daphne	Fair_Baldwin	2p0c	2	0	13	8676.6809	5407.50476	12838.26	11186.95968	5611.02168	0	7820	52941.5856	73084.75781		
19	2	AL	TRUE	Daphne	Fair_Baldwin	2p1c	2	1	14	11064.8475	15888	14241.2784	14037.486	7079.8074	5962.7142	9341	70174.8576	73084.75781		
20	2	AL	TRUE	Daphne	Fair_Baldwin	2p2c	2	2	15	11064.7033	6066.0	14768.1084	7988.13276	15348.1992	10867	87567.2868	73084.75781			
21	2	AL	TRUE	Daphne	Fair_Baldwin	2p3c	2	3	16	14988.13104	818	10517.3112	19738.5408	18236.04	13117	104490.8316	73084.75781			
22	2	AL	TRUE	Daphne	Fair_Baldwin	2p4c	2	4	17	14988.16377	27274	15174.9828	15809.0664	1241.68184	18236.04	13462	111728.7192	73084.75781		
23	3	AL	FALSE	Barbour	Co_barbour	1p0c	1	0	18	5856.3237	4094	10890.72876	7486.59004	3294.7668	10880.72876	10880.72876	10880.72876	10880.72876	73084.75781	
24	3	AL	FALSE	Barbour	Co_barbour	1p1c	1	1	19	7776.6777	4094	11346.48264	8495.9568	4546.13124	4846.73616	5426	12776.4288	73084.75781		
25	3	AL	FALSE	Barbour	Co_barbour	1p2c	1	2	20	7776.6989	4094	12404.5008	14114.2988	5983.00508	6883.22532	7136.3404	13337.7192	73084.75781		
26	3	AL	FALSE	Barbour	Co_barbour	1p3c	1	3	21	7776.7188	17208	13271.94	14182.746	5491.85332	4846.73616	7386	60343.7112	73084.75781		
27	3	AL	FALSE	Barbour	Co_barbour	1p4c	1	4	22	7776.7388	17208	13271.94	14182.746	5491.85332	4846.73616	7386	60343.7112	73084.75781		
28	3	AL	FALSE	Barbour	Co_barbour	2p0c	2	0	23	8500.5934	15189.768	12711.6432	13373.50908	4289.5144	61652.499	61652.499	61652.499	61652.499	61652.499	
29	3	AL	FALSE	Barbour	Co_barbour	2p1c	2	1	24	8500.5934	15189.768	12711.6432	13373.50908	4289.5144	61652.499	61652.499	61652.499	61652.499	61652.499	
30	3	AL	FALSE	Barbour	Co_barbour	2p2c	2	2	25	8500.5934	15189.768	12711.6432	13373.50908	4289.5144	61652.499	61652.499	61652.499	61652.499	61652.499	
31	3	AL	FALSE	Barbour	Co_barbour	2p3c	2	3	26	8500.5934	15189.768	12711.6432	13373.50908	4289.5144	61652.499	61652.499	61652.499	61652.499	61652.499	
32	3	AL	FALSE	Barbour	Co_barbour	2p4c	2	4	27	8500.5934	15189.768	12711.6432	13373.50908	4289.5144	61652.499	61652.499	61652.499	61652.499	61652.499	
33	4	AL	TRUE	Birmingham	Bibb	1p0c	1	0	28	7973.92164	3050.28684	11446.48464	13566.48	3994.50552	5930.05058	13798.2588	8121	56978.5728	59443.98828	
34	4	AL	TRUE	Birmingham	Bibb	1p1c	1	1	29	7973.92164	4495.38168	11436.48264	8485.9568	4546.13124	4846.73616	5426	12776.4288	59443.98828		
35	4	AL	TRUE	Birmingham	Bibb	1p2c	1	2	30	7973.92164	5886.48453	11436.48264	13566.48	3994.50552	5930.05058	13798.2588	8121	56978.5728	59443.98828	
36	4	AL	TRUE	Birmingham	Bibb	1p3c	1	3	31	7973.92164	6334.01436	11436.48264	13566.48	3994.50552	5930.05058	13798.2588	8121	56978.5728	59443.98828	
37	4	AL	TRUE	Birmingham	Bibb	1p4c	1	4	32	7973.92164	6877.4887	14554.1638	17442.2784	5983.02768	10233.41504	13469	100823.52	59443.98828		
38	4	AL	TRUE	Birmingham	Bibb	2p0c	2	0	33	8500.9614	5593.15296	13391.292	15690.95968	5106.50588	6147.8298	7422	57190.70768	59443.98828		
39	4	AL	TRUE	Birmingham	Bibb	2p1c	1	1	34	7979.21688	6960.04764	14747.328	14666.9988	6005.46045	5360.58624	8537	66115.8636	59443.98828		
40	4	AL	TRUE	Birmingham	Bibb	2p2c	2	2	35	7979.21688	8814.74928	15243.7212	17642.436	6027.02928	16446.75058	8052	73638.2052	59443.98828		
41	4	AL	TRUE	Birmingham	Bibb	2p3c	2	3	36	7979.21688	9354.42768	15243.7212	17642.436	6027.02928	16446.75058	8052	73638.2052	59443.98828		
42	4	AL	TRUE	Birmingham	Bibb	2p4c	2	4	37	7979.21688	10876.1389	15271.283	17642.436	6027.02928	16446.75058	8052	73638.2052	59443.98828		
43	5	AL	TRUE	Birmingham	Hol Blount	1p0c	1	0	38	7973.92164	3050.28684	11446.48464	13566.48	3994.50552	5930.05058	13798.2588	8121	56978.5728	59443.98828	
44	5	AL	TRUE	Birmingham	Hol Blount	1p1c	1	1	39	7973.92164	4495.38168	12233.4776	8821.218	4952.71304	5118.81588	6172	50297.9412	59443.98828		
45	5	AL	TRUE	Birmingham	Hol Blount	1p2c	1	2	40	7973.92164	5886.48408	14040.508	14141.2988	6883.23532	13175.9802	7743	6233.73036	59443.98828		
46	5	AL	TRUE	Birmingham	Hol Blount	1p3c	1	3	41	7973.92164	6334.01436	14040.508	14141.2988	6883.23532	13175.9802	7743	6233.73036	59443.98828		
47	5	AL	TRUE	Birmingham	Hol Blount	1p4c	1	4	42	7973.92164	6877.4887	14040.508	14141.2988	6883.23532	13175.9802	7743	6233.73036	59443.98828		
48	5	AL	TRUE	Birmingham	Hol Blount	2p0c	2	0	43	7724.88134	5972.61832	13399.2	13399.2	5906.13116	4860.3352	8436.05588	0	7462	51717.5468	59443.98828
49	5	AL	TRUE	Birmingham	Hol Blount	2p1c	2	1	44	7724.88134	6423.50204	14747.328	14666.9988	5906.13116	4860.3352	8436.05588	0	6063	37547.3496	59466.98828
50	5	AL	TRUE	Birmingham	Hol Blount	2p2c	2	2	45	7724.88134	6877.4887	15253.2432	17642.436	6021.218	4952.71304	5118.81588	6172	50297.9412	59443.98828	
51	5	AL	TRUE	Birmingham	Hol Blount	1p1c	1	1	46	8886.84084	8801.1898	12168.228	10864.59808	5118.81588	6172	50297.9412	59443.98828			
52	5	AL	TRUE	Birmingham	Hol Blount	1p2c	1	2	47	8886.84084	934.38168	11745.20248	11745.20248	5118.81588	6172	50297.9412	59443.98828			
53	5	AL	TRUE	Birmingham	Hol Blount	1p3c	1	3	48	8886.84084	934.38168	11745.20248	11745.20248	5118.81588	6172	50297.9412	59443.98828			
54	5	AL	TRUE	Birmingham	Hol Blount	1p4c	1													

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	
1	Case_Id	State	IsMetro	Arename	County	Family_Member_Count	Adult_Count	Child_Count	Total_Member	Housing_Cost	Food_Cost	Transportation_Cost	Healthcare_Cost	Other_Necessities_Cost	Childcare_Cost	Taxes	Total_Cost	Median_Family_Income	
2	1	AL	TRUE	Montgomery	Al Autauga	1p0c		1	1	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	73010.41406	
3	1	AL	TRUE	Montgomery	Al Autauga	1p1c	1	1	2	12067.5024	5085.19598	11588.19288	8659.5564	6217.45896	6147.8298	7422	57194.7265	73010.41406	
4	1	AL	TRUE	Montgomery	Al Autauga	1p2c	1	2	3	12067.5024	4860.20539	11581.7772	11581.63236	7075.68816	15824.694	1827.0388		73010.41406	
5	1	AL	TRUE	Montgomery	Al Autauga	1p3c	1	3	4	15257.1504	9952.23924	13452.186	14501.2076	9134.35252	18802.1892	13102	94203.5328	73010.41406	
6	1	AL	TRUE	Montgomery	Al Autauga	1p4c	1	4	5	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13460	100823.52	73010.41406	
7	1	AL	TRUE	Montgomery	Al Autauga	2p0c	2	0	2	10180.2942	6334.01436	12861.8868	11747.95568	5983.78524	6147.8298	9460	8237	55071.668	73010.41406
8	1	AL	TRUE	Montgomery	Al Autauga	2p1c	2	1	3	12067.5024	7883.31888	13859.112	14397.0372	17317.1292	7228.96616	18069	100823.52	73010.41406	
9	1	AL	TRUE	Montgomery	Al Autauga	2p2c	2	2	4	15257.1504	9952.23924	14725.7856	17425.7856	7998.4584	15824.694	1827.0388		73010.41406	
10	1	AL	TRUE	Montgomery	Al Autauga	2p3c	2	3	5	15257.1504	2110.7704	14994.946	2031.11972	9945.10176	18802.1892	13210	104640.1524	73010.41406	
11	1	AL	TRUE	Montgomery	Al Autauga	2p4c	2	4	6	15257.1504	14917.3584	15064.6356	2116.2652	10931.431504	18802.1892	13417	115554.8596	73010.41406	
12	2	AL	TRUE	Daphne-Fair Baldwin	1p0c	1	0	1	1	8616	3714.2984	10731.65256	5593.47984	4467.7518	0	6456	39578.894	77884.75781	
13	2	AL	TRUE	Daphne-Fair Baldwin	1p1c	1	1	2	3	11064	5473.96836	11522.93844	8444.00688	5992.35828	5962.7142	7097	55556.5956	77884.75781	
14	2	AL	TRUE	Daphne-Fair Baldwin	1p2c	1	2	4	4	11064	8020.27812	12869.3532	61294.53337	6914.98608	15138.1991	9474	74988.9672	77884.75781	
15	2	AL	TRUE	Daphne-Fair Baldwin	1p3c	1	3	5	11064	1084.49398	13048.13484	14120.54212	9037.04641	1827.0388		73010.41406			
16	2	AL	TRUE	Daphne-Fair Baldwin	1p4c	1	4	6	14988	13096.794	17733.354	16995.588	10176.32776	18236.04	13434	100899.124	77884.75781		
17	2	AL	TRUE	Daphne-Fair Baldwin	2p0c	2	0	2	6	8676	6809.54076	11866.95968	15613.02168	1620	52941.5856	77884.75781			
18	2	AL	TRUE	Daphne-Fair Baldwin	2p1c	2	1	3	7	11064	8475.15888	14242.7484	14037.486	7079.8074	5962.7142	9341	70174.8576	77884.75781	
19	2	AL	TRUE	Daphne-Fair Baldwin	2p2c	2	2	4	8	11064	10733.60664	14768.1084	16888.014	7898.13276	15138.1992	10867	87567.2868	77884.75781	
20	2	AL	TRUE	Daphne-Fair Baldwin	2p3c	2	3	5	14988	13104.918	15071.5112	1978.8408	10179.3728	18236.04	13173	10490.8316	77884.75781		
21	2	AL	TRUE	Daphne-Fair Baldwin	2p4c	2	4	6	14988	13370.296	15071.5112	1978.8408	10179.3728	18236.04	13173	10490.8316	77884.75781		
22	3	AL	FALSE	Barbour County	Barbour	1p0c	1	0	1	5854	3237.03894	10890.72876	5686.79004	3294.7668	0	5458	84423.602	42822.75931	
23	3	AL	FALSE	Barbour County	Barbour	1p1c	1	1	2	7776	4770.609	11436.48264	8495.9568	4546.11324	4846.78616	5426	4797.2498	42822.75931	
24	3	AL	FALSE	Barbour County	Barbour	1p2c	1	2	3	11064	6989.73852	12036.944	11305.12556	5350.2096	11644.75050	6235	61337.8476	42822.75931	
25	3	AL	FALSE	Barbour County	Barbour	1p3c	1	3	4	9672	9324.6204	14114.2908	16881.42908	6883.22532	13736.3484	7543	7369.248	42822.75931	
26	3	AL	FALSE	Barbour County	Barbour	1p4c	1	4	5	9672	11413.96584	12535.0248	16921.45208	17640.51212	7640.72712	13736.3484	7543	7369.248	42822.75931
27	3	AL	FALSE	Barbour County	Barbour	2p0c	2	0	2	5900	11894.14016	11375.01492	14099.8412	14099.8412	7409.59908	0	7848.492	42822.75931	
28	3	AL	FALSE	Barbour County	Barbour	2p1c	2	1	3	7776	1786.17208	15271.94	14217.7426	15375.009	5485.85332	4846.78616	7386	6043.7152	42822.75931
29	3	AL	FALSE	Barbour County	Barbour	2p2c	2	2	4	11064	1934.27468	16111.864	16888.014	6207.02928	11644.75029	8052	7383.2052	42822.75931	
30	3	AL	FALSE	Barbour County	Barbour	2p3c	2	3	5	9672	14121.0462	13707.0296	18901.081	10719.3728	18236.04	13462	11172.8192	42822.75931	
31	3	AL	FALSE	Barbour County	Barbour	2p4c	2	4	6	11064	17072.1304	15243.7272	17642.436	17642.436	6731.43756	13736.3484	8754	90457.3888	42822.75931
32	4	AL	TRUE	Birmingham-Ho Bibb	1p0c	1	0	1	1	9672	13967.622	13639.788	22610.2476	8546.82836	13736.3484	8254	90457.3888	42822.75931	
33	4	AL	TRUE	Birmingham-Ho Bibb	1p1c	1	1	2	2	10180.2942	6334.01436	12861.8868	11474.95968	5983.78524	0	6063	37547.3496	42822.75931	
34	4	AL	TRUE	Birmingham-Ho Bibb	1p2c	1	2	3	7776	9779.2168	10566.48536	15566.48	11796.9558	5930.00008	13798.2586	8121	69578.5728	42822.75931	
35	4	AL	TRUE	Birmingham-Ho Bibb	1p3c	1	3	4	12171.2832	8786.66232	14094.588	14772.6948	7791.72732	16394.4708	10570	8512.7244	42822.75931		
36	4	AL	TRUE	Birmingham-Ho Bibb	1p4c	1	4	5	12171.2832	10755.46872	14558.126	17748.432	8505.10332	16394.4708	10692	91170.768	42822.75931		
37	4	AL	TRUE	Birmingham-Ho Bibb	2p0c	2	0	2	5	12067.5024	9952.23924	13391.6292	1690.95968	5106.50568	0	7616	51898.272	42822.75931	
38	4	AL	TRUE	Birmingham-Ho Bibb	2p1c	2	1	3	6	11064	13104.918	15071.5112	1978.8408	10179.3728	18236.04	13173	10440.8316	42822.75931	
39	4	AL	TRUE	Birmingham-Ho Bibb	2p2c	2	2	4	7	11064	16037.27776	15719.8246	22589.6664	11241.68184	18236.04	13462	11172.8192	42822.75931	
40	4	AL	TRUE	Birmingham-Ho Bibb	2p3c	2	3	5	11064	17072.1304	15243.7272	17642.436	17642.436	6731.43756	13736.3484	8754	90457.3888	42822.75931	
41	4	AL	TRUE	Birmingham-Ho Bibb	2p4c	2	4	6	11064	2110.7704	14994.948	2031.11972	9945.10176	18802.1892	13210	104640.1524	42822.75931		
42	5	AL	TRUE	Birmingham Blount	1p0c	1	0	1	1	7246.0564	3257.7894	11522.93844	8444.00688	5992.35284	0	6063	37547.3496	42822.75931	
43	5	AL	TRUE	Birmingham Blount	1p1c	1	1	2	2	8886.84084	4801.1898	12168.56568	8821.218	4467.7518	0	6458	39578.894	77884.75781	
44	5	AL	TRUE	Birmingham Blount	1p2c	1	2	3	8	8886.84084	7033.54503	13546.47984	18801.081	10719.3728	18236.04	13462	11172.8192	42822.75931	
45	5	AL	TRUE	Birmingham Blount	1p3c	1	3	4	9672	13959.268	15243.7272	17642.436	17642.436	6731.43756	13736.3484	8754	90457.3888	42822.75931	
46	5	AL	TRUE	Birmingham Blount	1p4c	1	4	5	9672	17072.1304	15243.7272	17642.436	17642.436	6731.43756	13736.3484	8754	90457.3888	42822.75931	
47	5	AL	TRUE	Birmingham Blount	2p0c	2	0	2	3	7776	1310.2796	15526.284	23593.9116	9380.8452	16394.4708	10936	101718.752	42822.75931	
48	5	AL	TRUE	Birmingham Blount	2p1c	2	1	3	4	11064	1724.7832	13170.2796	15526.284	23593.9116	9380.8452	16394.4708	10936	101718.752	42822.75931
49	5	AL	TRUE	Birmingham Blount	2p2c	2	2	4	5	11064	2110.7704	14994.948	2031.11972	9945.10176	18802.1892	13210	104640.1524	42822.75931	
50	5	AL	TRUE	Birmingham Blount	2p3c	2	3	6	5	11565.44016	11494.2576	15544.386	20618.1744	8352.1765	16555.1088	10581	93801.4632	42822.75931	

To check how many duplicates rows in our dataset, we performed the following steps.

Average: 1589.311804	Count: 31431	Sum: 49952070	Display Settings	Display	Print	Save	Copy	Find	Find Previous	Find Next	Find All	Find & Replace	Clear	Close
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Step 1: Select Range

Step 2: Data

Step 3: Remove Duplicates

Step 4: Remove Duplicates

cost of living us... • Saved to this PC

Savalya, Ankita Hasmukhbhai

File Home Insert Draw Page Layout Review View Automate Developer Help CDXZipStream Power Pivot Comments Share

From Text/CSV From Picture Recent Sources Refresh Properties All Workbook Links Organization Stocks Sort Advanced Filter Forecast Sheet Group Ungroup Subtotal Outline Analysis

Get From Web From Table/Range Existing Connections

Get & Transform Data Case_id

A1 Case_id State isMetro Areaname County Family_mer Adult_count Child_count Total_member housing_cost_food_cost transportation_co healthcare_co taxes total_cost median_family_income

1 1 AL TRUE Montgomer Autauga 1pc0 1 0 1 8505.72876 3454.91712 10829.16876 5737.47984 6393 39254.0532 73010.41406

2 1 AL TRUE Montgomer Autauga 1pc1 1 1 2 12067.5024 5091.70788 11588.19288 8659.5564 7422 57194.3256 73010.41406

3 1 AL TRUE Montgomer Autauga 1pc2 1 2 3 12067.5024 7460.20308 12361.7772 11581.632 9770 76141.3038 73010.41406

4 1 AL TRUE Montgomer Autauga 1pc3 1 3 4 15257.1504 9952.23924 13452.186 14503.7075 9134.3562 18802.1892 13102 9203.5328 73010.41406

5 1 AL TRUE Montgomer Autauga 1pc4 1 4 5 15257.1504 15257.1504 13452.186 14503.7075 10890.19706 11308.112 11479.05988 5803.7524 18802.1892 13102 9203.5328 73010.41406

6 1 AL TRUE Montgomer Autauga 1pc5 2 1 6 12060.2982 6334.01485 12881.8888 11308.112 11479.05988 5803.7524 18802.1892 13102 9203.5328 73010.41406

7 1 AL TRUE Montgomer Autauga 1pc6 2 2 7 12060.5024 7883.31388 13889.112 14397.0372 7238.06944 6147.82098 9460 70773.6748 73010.41406

8 1 AL TRUE Montgomer Autauga 1pc7 2 3 8 12060.5024 9952.23924 13889.112 14397.0372 7238.06944 6147.82098 9460 70773.6748 73010.41406

9 1 AL TRUE Montgomer Autauga 1pc8 2 4 9 12067.5024 9898.05268 14723.6076 13719.1128 7990.1484 1524.694 11190 89077.8696 73010.41406

10 1 AL TRUE Montgomer Autauga 1pc9 3 1 10 15257.1504 12189.7704 14994.6 2041.1872 9945.10176 18802.1892 13210 104640.1524 73010.41406

11 1 AL TRUE Montgomer Autauga 1pc0 2 4 11 15257.1504 14917.3584 23163.2652 10934.1504 18802.1892 13417 11554.8596 73010.41406

12 2 AL TRUE Daphne Fair Baldwin 1pc1 1 0 12 8616 3714.29484 10731.65256 5593.47984 4467.7518 0 6456 39578.8944 77884.75781

13 2 AL TRUE Daphne Fair Baldwin 1pc2 1 1 13 11064 5473.9846 11522.93846 11522.93846 5593.47984 4467.7518 0 7097 55556.5956 77884.75781

14 2 AL TRUE Daphne Fair Baldwin 1pc3 1 2 14 11064 8020.27812 12869.3532 11294.53344 6914.8660 15348.1992 0 9478 74988.9572 77884.75781

15 2 AL TRUE Daphne Fair Baldwin 1pc4 1 3 15 14988 10699.404 13452.1864 14145.0612 9307.55928 18236.04 12996 93826.8756 77884.75781

16 2 AL TRUE Daphne Fair Baldwin 1pc5 1 4 16 14988 13096.794 13773.354 16995.588 10176.22776 18236.04 13434 100699.524 77884.75781

17 2 AL TRUE Daphne Fair Baldwin 1pc6 2 0 17 8616 809.54076 12838.2776 11186.95968 5611.02168 14037.4886 0 7820 52941.8586 77884.75781

18 2 AL TRUE Daphne Fair Baldwin 1pc7 2 1 18 11064 8475.15888 14212.784 14037.4886 7079.8074 5962.7142 9341 70174.8576 77884.75781

19 2 AL TRUE Daphne Fair Baldwin 1pc8 2 2 19 11064 10733.0066 14768.1084 16888.014 7884.13276 15348.1992 10867 87567.8686 77884.75781

20 2 AL TRUE Daphne Fair Baldwin 1pc9 2 3 20 14988 13104.918 15071.3112 19738.5408 10179.1728 18236.04 13173 104490.8316 77884.75781

21 2 AL TRUE Daphne Fair Baldwin 1pc0 2 4 21 14988 16037.2776 15174.9824 22589.0664 11241.68184 18236.04 13462 111728.1912 77884.75781

22 3 AL FALSE Barbour Coi Barbour 1pc1 1 0 22 5856 3237.03924 10890.72876 5686.79004 3294.7668 0 5458 34423.602 42822.75391

23 3 AL FALSE Barbour Coi Barbour 1pc2 1 1 23 7776 6989.73852 11305.12536 5305.2096 1644.67508 6235 61337.8476 42822.75391

24 3 AL FALSE Barbour Coi Barbour 1pc3 1 2 24 9672 11413.9658 12530.9888 6883.22532 13736.34848 7543 73678.249 42822.75391

25 3 AL FALSE Barbour Coi Barbour 1pc4 1 3 25 9672 9942.36398 10991.50088 6993.5778 13736.34848 7543 73678.249 42822.75391

26 3 AL FALSE Barbour Coi Barbour 1pc5 2 0 26 5904 5934.01768 11171.6432 11373.58008 4265.58144 0 6632 40845.409 42822.75391

27 3 AL FALSE Barbour Coi Barbour 1pc6 2 1 27 7776 7386.17208 13271.94 14182.746 5403.85322 4846.73616 7386 60943.7112 42822.75391

28 3 AL FALSE Barbour Coi Barbour 1pc7 2 2 28 7776 9354.42768 13639.788 22610.24 5403.85322 4846.73616 7386 60943.7112 42822.75391

29 3 AL FALSE Barbour Coi Barbour 1pc8 2 3 29 11064 11421.4062 13707.796 19801.08 5403.85322 4846.73616 7386 60943.7112 42822.75391

30 3 AL FALSE Barbour Coi Barbour 1pc9 2 4 30 9672 13976.622 13639.788 22610.24 5403.85322 4846.73616 7386 60943.7112 42822.75391

31 3 AL FALSE Barbour Coi Barbour 1pc0 1 5 31 7776 6989.73852 11305.12536 5305.2096 1644.67508 6235 61337.8476 42822.75391

32 4 AL TRUE Birmingham Bib 1pc1 1 0 32 7973.91216 3050.28684 11446.48464 5845.476 5443.98828

33 4 AL TRUE Birmingham Bib 1pc2 1 1 33 2 1080.2982 609.54076 12838.2776 11186.95968 5611.02168 14037.4886 0 7820 52941.8586 77884.75781

34 4 AL TRUE Birmingham Bib 1pc3 1 2 34 9779.52168 6586.48586 13566.48 11796.95968 5611.02168 14037.4886 0 7820 52941.8586 77884.75781

35 4 AL TRUE Birmingham Bib 1pc4 1 3 35 12711.72832 8786.66322 14772.69 10755.4687 14558.136 17748.4 59443.98828

36 4 AL TRUE Birmingham Bib 1pc5 1 4 36 12711.72832 10755.4687 14558.136 17748.4 59443.98828

37 4 AL TRUE Birmingham Bib 1pc6 2 0 37 850.99164 5592.19296 13391.6292 11690.953 59443.98828

38 4 AL TRUE Birmingham Bib 1pc7 2 1 38 9779.52168 6960.04764 14747.0328 14666.68 59443.98828

39 4 AL TRUE Birmingham Bib 1pc8 2 2 39 9779.52168 8814.74928 15243.712 17642.4 59443.98828

40 4 AL TRUE Birmingham Bib 1pc9 2 3 40 12711.72832 10762.1389 15485.2176 20618.17 59443.98828

41 4 AL TRUE Birmingham Bib 1pc0 2 4 41 12711.72832 13170.2796 15526.2884 23593.9 59443.98828

42 5 AL TRUE Birmingham Blount 1pc1 1 0 42 7246.05684 3257.7894 11329.07664 5845.476 59443.98828

43 5 AL TRUE Birmingham Blount 1pc2 1 1 43 2 8886.84084 4801.1898 8821.218 4959.71304 5118.81588 6172 50927.9412 63966.12891

44 5 AL TRUE Birmingham Blount 1pc3 1 2 44 9896.94084 7034.44507 13546.47018 11706.05638 4768.04613 13171.60508 7711 6703.7091 63966.12891

Step 5:

Microsoft Excel

1 duplicate values found and removed: 31430 unique values remain. Note that counts may include empty cells, spaces, etc.

OK

Case_Id	State	Ismetro	Arename	County	Family	Member_Count	Adult_Count	Child_Count	Total_Member_Count	Household_Cost	Food_Cost	Transportation_Cost	Healthcare_Cost	Other_Necessities_Cost	Childcare_Cost	Taxes_Total_Cost	Median_Family_Income	
2	1 AL	TRUE	Montgomery	Al Autauga	1p0c	1	0	1	8505.7876	3454.9172	10283.16876	5373.47984	0	6391	39254.0532	79310.41406		
3	1 AL	TRUE	Montgomery	Al Autauga	1p0c	1	1	2	12067.5024	5091.70788	11588.19288	8659.5564	6217.45896	6147.82958	7422	57194.3256	79310.41406	
4	1 AL	TRUE	Montgomery	Al Autauga	1p0c	1	2	3	12067.5024	7460.20308	12361.7772	11581.6326	7075.65816	15824.694	9770	76141.0300	79310.41406	
5	1 AL	TRUE	Montgomery	Al Autauga	1p0c	1	3	4	12527.1504	9952.23924	13452.186	14503.7076	9134.3562	18802.1892	13102	94203.5328	79310.41406	
6	1 AL	TRUE	Montgomery	Al Autauga	1p0c	1	4	5	12527.1504	11214.11124	13740.18686	14943.10456	9442.74302	18802.1892	13102	94203.5328	79310.41406	
7	1 AL	TRUE	Montgomery	Al Autauga	1p0c	2	0	2	10280.2942	630.01436	12861.8668	11474.95568	5983.7824	8237	55071.6684	79310.41406		
8	1 AL	TRUE	Montgomery	Al Autauga	2p1c	2	1	3	12067.5024	7883.31888	13589.112	14391.0732	7228.96944	6147.82988	9460	70773.6744	79310.41406	
9	1 AL	TRUE	Montgomery	Al Autauga	2p0c	2	2	4	12067.5024	9984.05268	14723.6076	17310.1128	7990.4844	15824.694	11169	89077.8696	79310.41406	
10	1 AL	TRUE	Montgomery	Al Autauga	2p3c	2	3	5	12527.1504	12189.7704	14994.6	20241.1872	9945.10176	18802.1892	13210	104640.1524	79310.41406	
11	1 AL	TRUE	Montgomery	Al Autauga	2p0c	2	4	6	12527.1504	14917.3584	15064.2636	23163.2652	10933.41504	18802.1892	13417	111554.8596	79310.41406	
12	2 AL	TRUE	Daphne	Daphne	1p0c	1	0	1	8740.1884	4468.1636	10594.5396	5939.4768	4407.15002	6147.82988	7422	57194.3256	79310.41406	
13	2 AL	TRUE	Daphne	Daphne	Baldwin	1a1c	1	1	2	11064	4735.9636	11522.59844	8444.00688	5993.35826	5962.71408	7097	55556.5956	77884.5758
14	2 AL	TRUE	Daphne	Daphne	Baldwin	1a2c	1	2	3	11064	8020.27812	12869.3352	11294.53344	6019.59848	15348.1992	9478	74988.9672	77884.5758
15	2 AL	TRUE	Daphne	Daphne	Baldwin	1p0c	1	3	4	14988	10699.404	13425.64848	14145.0612	9307.55928	18236.04	12998	93826.8756	77884.5758
16	2 AL	TRUE	Daphne	Daphne	Baldwin	1p0c	1	4	5	14988	13096.794	13773.354	16995.588	10176.22776	18236.04	13434	106999.524	77884.5758
17	2 AL	TRUE	Daphne	Daphne	Baldwin	2p0c								6110.168	0	7820	52941.5856	77884.5758
18	2 AL	TRUE	Daphne	Daphne	Baldwin	2p0c								7097.17408	0	7820	52941.5856	77884.5758
19	2 AL	TRUE	Daphne	Daphne	Baldwin	2a2c								1084.15276	15348.1991	9867	8767.2868	77884.5758
20	2 AL	TRUE	Daphne	Daphne	Baldwin	2p3c								10179.1728	18236.04	13173	10449.8316	77884.5758
21	2 AL	TRUE	Daphne	Daphne	Baldwin	2p0c								241.68184	13462	111728.7192	77884.5758	
22	3 AL	FALSE	Barbour	County, Barbour	1p0c									3294.7668	0	5458	34423.602	42822.5793
23	3 AL	FALSE	Barbour	County, Barbour	1p0c									5456.11124	4286.47935	5426	47297.4288	42822.5793
24	3 AL	FALSE	Barbour	County, Barbour	1p0c									5350.11124	16144.75056	5120	49275.4288	42822.5793
25	3 AL	FALSE	Barbour	County, Barbour	1a3c									83.25512	13736.3884	7543	3369.348	42822.5793
26	3 AL	FALSE	Barbour	County, Barbour	1p0c									7645.27712	13736.3884	7543	16991.9136	42822.5793
27	3 AL	FALSE	Barbour	County, Barbour	2p0c									6207.02928	16144.75056	8052	73638.2052	42822.5793
28	3 AL	FALSE	Barbour	County, Barbour	2p1c									7776	17386.2052	8052	84708.2052	42822.5793
29	3 AL	FALSE	Barbour	County, Barbour	2p0c									11375.58008	16144.75056	8052	84708.2052	42822.5793
30	3 AL	FALSE	Barbour	County, Barbour	2p0c									12233.8776	16144.75056	8052	84708.2052	42822.5793
31	3 AL	FALSE	Barbour	County, Barbour	1p0c									11796.9558	16144.75056	8052	84708.2052	42822.5793
32	4 AL	TRUE	Birmingham-Ho	Baldwin	1p0c	1	0	1	7973.91214	3050.28684	11446.48464	5845.47984	3994.50552	0	6261	385.7175	59443.9882	
33	4 AL	TRUE	Birmingham-Ho	Baldwin	1p1c	1	1	2	9779.21604	4495.38168	12233.8776	8821.218	5172.36072	5360.58682	6450	52312.9272	59443.9882	
34	4 AL	TRUE	Birmingham-Ho	Baldwin	1p2c	1	2	3	9779.21604	5656.48536	13566.48	5930.05098	3798.75806	8121	6957.5728	59443.9882		
35	4 AL	TRUE	Birmingham-Ho	Baldwin	1p0c	1	3	4	12717.3831	8766.66273	14058.588	14773.69408	16394.4708	10579	85172.44	59443.9882		
36	4 AL	TRUE	Birmingham-Ho	Baldwin	1p0c	1	4	5	12717.3831	10519.00008	14508.126	14773.69408	8050.11792	16394.4708	10579	85172.44	59443.9882	
37	4 AL	TRUE	Birmingham-Ho	Baldwin	2p0c	2	0	3	8080.85164	5592.19296	13391.6392	11590.95968	5106.5568	0	7616	5389.272	59443.9882	
38	4 AL	TRUE	Birmingham-Ho	Baldwin	2p1c	2	1	3	9779.21604	6960.04764	14747.0328	16660.6936	6065.406	5360.58682	8537	66115.8636	59443.9882	
39	4 AL	TRUE	Birmingham-Ho	Baldwin	2p0c	2	2	4	9779.21604	8814.74928	17642.712	17642.436	6737.43756	13736.3884	9694	81709.8984	59443.9882	
40	4 AL	TRUE	Birmingham-Ho	Baldwin	2p3c	2	3	5	12717.3831	10762.13892	16063.1744	20618.1744	8507.52024	16394.4708	10934	95418.6264	59443.9882	
41	4 AL	TRUE	Birmingham-Ho	Baldwin	2p0c	2	4	6	12717.3831	13170.3796	15522.3884	23595.17206	9880.13796	16394.4708	10936	95418.6264	59443.9882	
42	4 AL	TRUE	Birmingham-Ho	Baldwin	2p0c	1	0	1	7248.05844	3050.28684	11446.48464	5845.47984	3980.07986	5805.47986	5939	3706.0496	59443.9882	
43	5 AL	TRUE	Birmingham-Ho	Baldwin	1a1c	1	1	2	8885.80804	4801.1898	12188.268	8821.218	4595.1588	5118.65488	6172	50937.9412	63966.12891	
44	5 AL	TRUE	Birmingham-Ho	Baldwin	1a2c	1	2	3	8886.80804	7034.54929	13546.704	11796.9558	5768.94812	13175.9808	7711	67020.7902	63966.12891	
45	5 AL	TRUE	Birmingham-Ho	Baldwin	1p3c	1	3	4	11556.44016	9384.3948	14271.2064	14773.69408	7587.69072	15655.1088	9883	8362.4412	63966.12891	
46	5 AL	TRUE	Birmingham-Ho	Baldwin	1p0c	1	4	5	12527.1504	11591.55292	14485.1376	14485.46464	8349.55644	15655.1088	10191	89422.8576	63966.12891	
47	5 AL	TRUE	Birmingham-Ho	Baldwin	2p0c	2	0	3	7248.05844	9737.61522	14271.0072	14961.55592	4961.18704	13736.3884	14565	11617.7232	63966.12891	
48	5 AL	TRUE	Birmingham-Ho	Baldwin	2p1c	2	1	3	8880.85164	10800.85084	14705.9282	15090.95968	5991.05312	16064.688	6088	51053.5876	63966.12891	
49	5 AL	TRUE	Birmingham-Ho	Baldwin	2p2c	2	2	4	8886.80804	9414.39252	15238.342	17642.436	6631.28832	13175.9808	8249	8042.3204	63966.12891	
50	5 AL	TRUE	Birmingham-Ho	Baldwin	2a2c	2	3	5	11556.44016	11494.2576	15544.386	20618.1744	8352.17652	15655.1088	10581	93801.4632	63966.12891	

3.7. Extracting Area Name

Before:

Column Name: Areaname

We focused on extracting relevant information for our analysis, specifically the area from the existing values.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	Case_Id	State	IsMetro	AreaName	County	Family_Member_Count	Adult_C	Child_Count	Total_N	Housing_Cost	Food_Cost	Transportation_H	Healthcare_Cost	Other_Necessities_Co
2	1	AL	TRUE	Montgomery, AL MSA	Autauga	1p0c	1	0	1	8505.72876	3454.91712	10825.16876	5737.47984	4333.81
3	1	AL	TRUE	Montgomery, AL MSA	Autauga	1p1c	1	1	2	12067.5024	5091.70788	11588.15938	8659.5564	6217.47
4	1	AL	TRUE	Montgomery, AL MSA	Autauga	1p2c	1	2	3	12067.5024	7460.20308	12035.64382	10361.7772	7035.65
5	1	AL	TRUE	Montgomery, AL MSA	Autauga	1p3c	1	3	4	15257.1504	9952.23924	13452.1886	14503.7076	9134.56
6	1	AL	TRUE	Montgomery, AL MSA	Autauga	1p4c	1	4	5	15257.1504	12182.214	13744.5984	17425.7856	9942.34
7	1	AL	TRUE	Montgomery, AL MSA	Autauga	2p0c	2	0	2	10180.2942	6334.01436	12861.8868	11474.95968	5983.71
8	1	AL	TRUE	Montgomery, AL MSA	Autauga	2p1c	2	1	3	12067.5024	7883.3188	13589.112	14397.0372	7228.94
9	1	AL	TRUE	Montgomery, AL MSA	Autauga	2p2c	2	2	4	12067.5024	9884.05268	14723.6076	17319.1128	7990.7
10	1	AL	TRUE	Montgomery, AL MSA	Autauga	2p3c	2	3	5	15257.1504	12189.7704	14994.6	20241.1872	9945.14
11	1	AL	TRUE	Montgomery, AL MSA	Autauga	2p4c	2	4	6	15257.1504	14917.3584	15064.2636	23163.4652	10934.4
12	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c	1	0	1	8616	3714.29484	10731.6256	5513.47984	4467.1
13	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c	1	1	2	10180.2942	6334.01436	12861.8868	11474.95968	5983.71
14	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p2c	1	2	3	11064	8020.27812	12869.3352	11294.53344	6914.04
15	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c	1	3	4	14988	10699.404	13452.0648	14145.0612	9307.51
16	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p4c	1	4	5	14988	13096.794	13773.354	16995.588	10176.2
17	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c	2	0	2	8676	6809.54076	12838.26	11186.95968	5611.0
18	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c	2	1	3	11064	8475.1588	14214.2784	14037.486	7079.4
19	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c	2	2	4	11064	10733.60664	14768.1084	16888.014	7898.1
20	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c	2	3	5	14988	13104.918	15071.3112	19738.5408	10179.7
21	2	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c	2	4	6	14988	16037.2776	15174.9828	22589.6664	11241.64
22	3	AL	FALSE	Barbour County, AL	Barbour	1p0c	1	0	1	5852	3714.29484	10890.2876	5686.79004	3294.1
23	3	AL	FALSE	Barbour County, AL	Barbour	1p1c	1	1	2	7776	4776.609	11439.846	9695.958	4564.3
24	3	AL	FALSE	Barbour County, AL	Barbour	1p2c	1	2	3	7776	6809.54076	13236.7844	11305.17356	5350.4
25	3	AL	FALSE	Barbour County, AL	Barbour	1p3c	1	3	4	9672	9324.6204	12404.508	14114.2908	6853.21
26	3	AL	FALSE	Barbour County, AL	Barbour	1p4c	1	4	5	9672	11413.60548	12530.8248	16932.4572	7640.2
27	3	AL	FALSE	Barbour County, AL	Barbour	2p0c	2	0	2	5904	7366.1726	12711.6432	11373.58008	4289.54
28	3	AL	FALSE	Barbour County, AL	Barbour	2p1c	2	1	3	7776	8366.4084	13271.94	14182.746	5493.81
29	3	AL	FALSE	Barbour County, AL	Barbour	2p2c	2	2	4	7776	9354.42768	13611.864	16991.9136	6207.0
30	3	AL	FALSE	Barbour County, AL	Barbour	2p3c	2	3	5	9672	11421.0462	13720.7796	19801.0812	7642.84
31	3	AL	FALSE	Barbour County, AL	Barbour	2p4c	2	4	6	9672	13976.622	13639.788	22610.2476	8568.84
32	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p0c	1	0	1	7973.92164	3050.28684	11446.48464	5845.47984	3994.54
33	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p1c	1	1	2	9779.51948	4465.38558	12247.8776	8891.218	5172.38
34	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p2c	1	2	3	9779.51948	6586.40588	13048.4988	11391.9598	5933.0
35	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p3c	1	3	4	12717.2832	8786.60332	14094.588	14773.0948	7791.71
36	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p4c	1	4	5	12717.2832	10755.46872	14358.126	17748.432	8505.14
37	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	2p0c	2	0	2	8500.9614	5592.19296	13391.6292	11690.95968	5106.54
38	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	2p1c	2	1	3	9779.51268	6960.04764	14747.0328	14668.6988	6065
39	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	2p2c	2	2	4	9779.51268	8814.74928	15243.2722	17642.436	6737.41
40	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	2p3c	2	3	5	12717.2832	10762.13892	15485.2176	20618.744	8507.54
41	4	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	2p4c	2	4	6	12717.2832	13170.2796	15526.3284	23593.9116	9380.04
42	5	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Blount	1p0c	1	0	1	7246.05684	3257.7894	11329.7664	5845.47984	3805.04
43	5	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Blount	1p1c	1	1	2	8886.84084	4801.1889	12168.2568	8821.218	4595.71
44	5	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Blount	1p2c	1	2	3	8886.84084	7034.54592	13546.6704	11796.9558	5768.94
45	5	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Blount	1p3c	1	3	4	1556.44016	9384.3948	14122.7064	14772.6948	7587.65

B	C	D	E	F	G	H	I	J	K	L	M	N	
1	State	IsMetro	AreaName	AreaName	State		County	Family_Member_Count	Adult_C	Child_Count	Total_N	Housing_Cost	Transport
2	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	1p0c	1	0	1	8505.72876	3454.91712
3	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	1p1c	1	1	2	12067.5024	5091.70788
4	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	1p2c	1	2	3	12067.5024	7460.20308
5	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	1p3c	1	3	4	15257.1504	9952.23924
6	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	1p4c	1	4	5	15257.1504	12182.214
7	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	2p0c	2	0	2	10180.2942	6334.01436
8	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	2p1c	2	1	3	12067.5024	7883.3188
9	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	2p2c	2	2	4	12067.5024	9884.05268
10	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	2p3c	2	3	5	15257.1504	12189.7704
11	AL	TRUE	Montgomery, AL MSA	Montgomery	AL		Autauga	2p4c	2	4	6	15257.1504	14917.3584
12	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p0c		Baldwin	1p1c	1	0	1	8616	3714.29484
13	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p1c		Baldwin	1p2c	1	1	2	11064	5473.96336
14	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	1p3c		Baldwin	1p4c	1	2	3	11064	8020.27812
15	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p0c		Baldwin	2p1c	1	3	4	14988	10699.404
16	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p1c		Baldwin	2p2c	1	4	5	14988	13096.794
17	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p3c		Baldwin	2p4c	2	0	2	8676	6809.54076
18	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c		Baldwin	2p1c	2	1	3	11064	8475.1588
19	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p2c		Baldwin	2p3c	2	2	4	11064	10733.60664
20	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c		Baldwin	2p3c	2	3	5	14988	13104.918
21	AL	TRUE	Daphne-Fairhope-Foley, AL MSA	Baldwin	2p4c		Baldwin	2p4c	2	4	6	14988	16037.2776
22	AL	FALSE	Barbour County, AL	Barbour	1p0c		Barbour	1p1c	1	0	1	5852	3714.29484
23	AL	FALSE	Barbour County, AL	Barbour	1p1c		Barbour	1p2c	1	1	2	7776	4776.609
24	AL	FALSE	Barbour County, AL	Barbour	1p3c		Barbour	1p4c	1	2	3	7776	6809.54076
25	AL	FALSE	Barbour County, AL	Barbour	2p0c		Barbour	2p1c	1	3	4	9672	9324.6204
26	AL	FALSE	Barbour County, AL	Barbour	2p1c		Barbour	2p4c	1	4	5	9672	11413.60548
27	AL	FALSE	Barbour County, AL	Barbour	2p0c		Barbour	2p0c	2	0	2	5904	5934.51768
28	AL	FALSE	Barbour County, AL	Barbour	2p1c		Barbour	2p1c	2	1	3	7776	7386.17208
29	AL	FALSE	Barbour County, AL	Barbour	2p2c		Barbour	2p2c	2	2	4	7776	9354.42768
30	AL	FALSE	Barbour County, AL	Barbour	2p3c		Barbour	2p3c	2	3	5	9672	11421.0462
31	AL	FALSE	Barbour County, AL	Barbour	2p4c		Barbour	2p4c	2	4	6	9672	13976.622
32	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p0c		Bibb	1p1c	1	0	1	7973.92164	3050.28684
33	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p1c		Bibb	1p2c	1	1	2	12717.2832	4495.38168
34	AL	TRUE	Birmingham-Hoover, AL HUD Metro FMR Area	Bibb	1p3c		Bibb	1p4c	1	2	3	12717.2	

cost_of_living_us Sheet2

1	B	C	D	E	F	G	H	I	J	K	L	M
	State	Ismetro	Areaname	Areaname	State	County	Family_Member_Count	Adult_C	Child_Count	Total_M	Housing_Cost	Food_Cost
170	AL	TRUE	Florence-Muscle Shoals, AL MSA	Florence-Muscle Shoals	AL	Colbert	2p3c	2	3	5	11686.875	10505.89668
171	AL	TRUE	Florence-Muscle Shoals, AL MSA	Florence-Muscle Shoals	AL	Colbert	2p4c	2	4	6	11686.875	12856.7004
172	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	1p0c	1	0	1	5748	3071.037
173	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	1p1c	1	1	2	7608	4525.96248
174	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	1p2c	1	2	3	7608	6631.2912
175	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	1p3c	1	3	4	10884	8846.43456
176	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	1p4c	1	4	5	10884	10285.63476
177	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	2p0c	2	0	2	6384	5630.35
178	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	2p1c	2	1	3	7608	7007.39424
179	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	2p2c	2	2	4	7608	8874.71412
180	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	2p3c	2	3	5	10884	10835.35176
181	AL	FALSE	Conecuh County, AL	Conecuh County	AL	Conecuh	2p4c	2	4	6	10884	13259.8728
182	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	1p0c	1	0	1	6240	3475.66668
183	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	1p1c	1	1	2	8268	5122.28796
184	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	1p2c	1	2	3	8268	7505.00904
185	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	1p3c	1	3	4	10284	10012.01148
186	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	1p4c	1	4	5	10284	12255.3804
187	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	2p0c	2	0	2	6276	6372.0564
188	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	2p1c	2	1	3	8268	7930.66548
189	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	2p2c	2	2	4	8268	10044.0168
190	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	2p3c	2	3	5	10284	12262.9812
191	AL	FALSE	Coosa County, AL	Coosa County	AL	Coosa	2p4c	2	4	6	10284	15006.9504
192	AL	FALSE	Covington County, AL	Covington County	AL	Covington	1p0c	1	0	1	5748	3091.78752
193	AL	FALSE	Covington County, AL	Covington County	AL	Covington	1p1c	1	1	2	7608	4556.54328
194	AL	FALSE	Covington County, AL	Covington County	AL	Covington	1p2c	1	2	3	7608	6676.09716
195	AL	FALSE	Covington County, AL	Covington County	AL	Covington	1p3c	1	3	4	10152	8906.20824
196	AL	FALSE	Covington County, AL	Covington County	AL	Covington	1p4c	1	4	5	10152	10901.8008
197	AL	FALSE	Covington County, AL	Covington County	AL	Covington	2p0c	2	0	2	5988	5668.2774
198	AL	FALSE	Covington County, AL	Covington County	AL	Covington	2p1c	2	1	3	7608	7054.74168
199	AL	FALSE	Covington County, AL	Covington County	AL	Covington	2p2c	2	2	4	7608	8934.67752
200	AL	FALSE	Covington County, AL	Covington County	AL	Covington	2p3c	2	3	5	10152	10908.56256
201	AL	FALSE	Covington County, AL	Covington County	AL	Covington	2p4c	2	4	6	10152	13349.4672
202	AL	FALSE	Crenshaw County, AL	Crenshaw County	AL	Crenshaw	1p0c	1	0	1	5748	3413.41668
203	AL	FALSE	Crenshaw County, AL	Crenshaw County	AL	Crenshaw	1p1c	1	1	2	7608	5030.54592
204	AL	FALSE	Crenshaw County, AL	Crenshaw County	AL	Crenshaw	1p2c	1	2	3	7608	7370.59128
205	AL	FALSE	Crenshaw County, AL	Crenshaw County	AL	Crenshaw	1p3c	1	3	4	9468	9832.69332
206	AL	FALSE	Crenshaw County, AL	Crenshaw County	AL	Crenshaw	1p4c	1	4	5	9468	12035.8812

3.8. Removing extra spaces

Column Name: Ismetro

Before:

The "Ismetro" column initially contained leading spaces, and those spaces have been removed for clarity.

cost_of_living_us

1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Case_Id	State	Ismetro	Areaname	County	Adult_C	Child_Count	Total_M	Housing_Cost	Food_Cost	Transportation_Cost	Healthcare_Cost	Other_Necessities_Cost	Childcare_Cost	Taxes	Total_Cost	Median_Family_Income	
2	1	AL	TRUE	Montgomery	Autauga	1	0	1	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	
3	1	AL	TRUE	Montgomery	Autauga	1	1	2	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	
4	1	AL	TRUE	Montgomery	Autauga	1	2	3	12067.5024	7460.20308	12365.7772	11581.6329	7075.55815	15824.694	9770	7641.03688	
5	1	AL	TRUE	Montgomery	Autauga	1	3	4	12057.1594	9953.23974	13453.186	9134.3562	18602.1892	13102	94203.5328		
6	1	AL	TRUE	Montgomery	Autauga	1	4	5	12057.1594	12182.214	13744.5984	9942.63936	18602.1892	13469	100833.52		
7	1	AL	TRUE	Montgomery	Autauga	2	0	2	10180.2942	6334.01436	12861.8868	11747.95988	5983.78524	0	8237	55071.6684	
8	1	AL	TRUE	Montgomery	Autauga	2	1	3	12067.5024	7883.31888	13589.112	14397.0372	7228.69644	9660	7073.6744		
9	1	AL	TRUE	Montgomery	Autauga	2	2	4	12067.5024	9984.05268	14723.6076	17319.1128	7990.1484	15824.694	11169	8097.8696	
10	1	AL	TRUE	Montgomery	Autauga	2	3	5	12057.1594	12189.7704	14994.6	9455.10716	18802.1892	13210	104640.1524		
11	1	AL	TRUE	Montgomery	Autauga	2	4	6	12057.1594	14917.3594	15064.2636	23163.2652	10931.41504	18802.1892	13417	11154.8596	
12	2	AL	TRUE	Daphne-Fairhope-Baldwin	1	0	1	8616	3714.2984	10731.65256	5593.47984	4467.7518	0	6456	39578.8944		
13	2	AL	TRUE	Daphne-Fairhope-Baldwin	1	1	2	11064	5473.96836	11522.93844	8444.00688	5993.35828	5962.7124	7097	5556.59596		
14	2	AL	TRUE	Daphne-Fairhope-Baldwin	1	2	3	11064	8020.27812	12869.3352	11294.53344	6914.98608	15348.1992	9478	74988.9672		
15	2	AL	TRUE	Daphne-Fairhope-Baldwin	1	3	4	11064	10699.404	13452.9648	14154.0612	9307.55928	18236.04	12988	9386.22756		
16	2	AL	TRUE	Daphne-Fairhope-Baldwin	1	4	5	11064	13096.794	13773.354	16995.588	10176.22776	18236.04	13434	100999.524		
17	2	AL	TRUE	Daphne-Fairhope-Baldwin	2	0	2	8676	6809.54076	12838.26	11186.95968	5611.02168	0	7820	52941.5856		
18	2	AL	TRUE	Daphne-Fairhope-Baldwin	2	1	3	11064	8475.1874	14214.2784	7079.8074	5962.7142	9341	70174.8576			
19	2	AL	TRUE	Daphne-Fairhope-Baldwin	2	2	4	11064	10733.6064	14768.1084	70884.014	15484.1998	10867	87567.2686			
20	2	AL	TRUE	Daphne-Fairhope-Baldwin	2	3	5	11064	13098.5322	14738.17208	14738.17208	18236.04	13173	10887	77884.57581		
21	2	AL	TRUE	Daphne-Fairhope-Baldwin	2	4	6	11064	16037.2770	15174.3108	22066.0664	11241.68084	18236.04	13883	77884.57581		
22	3	AL	FALSE	Barbour County	Barbour	1	0	1	5856	3237.03934	10980.72076	5686.79004	0	5458	34241.602		
23	3	AL	FALSE	Barbour County	Barbour	1	1	2	7776	4777.609	11436.48264	8495.9568	4546.13124	48467.7616	5426	47297.4288	
24	3	AL	FALSE	Barbour County	Barbour	1	2	3	7776	6898.73852	12036.7944	5350.2096	11644.67590	6235	61337.8476		
25	3	AL	FALSE	Barbour County	Barbour	1	3	4	9672	9324.6204	12404.508	6883.2532	13736.3484	7543	73678.248		
26	3	AL	FALSE	Barbour County	Barbour	1	4	5	9672	11413.96584	12530.8248	16923.4572	7640.27712	13736.3484	7204	79120.8168	
27	3	AL	FALSE	Barbour County	Barbour	2	0	2	5904	5934.57168	12111.6432	11733.58008	4280.58144	0	6632	46845.492	
28	3	AL	FALSE	Barbour County	Barbour	2	1	3	7776	7386.17208	13271.94	14182.746	5493.85332	48467.7616	7386	6043.7112	
29	3	AL	FALSE	Barbour County	Barbour	2	2	4	7776	9354.42768	13611.864	16991.9136	6207.02928	11644.67508	8052	73638.2052	
30	3	AL	FALSE	Barbour County	Barbour	2	3	5	9672	11421.0462	13720.7796	19801.0812	7641.84272	13736.3484	8714	84708.5916	
31	3	AL	FALSE	Barbour County	Barbour	2	4	6	9672	13976.622	13639.788	22610.2476	8586.82386	13736.3484	8254	9045.3884	
32	4	AL	TRUE	Birmingham-H-C-Bibb	Bibb	1	0	1	7973.92164	3050.28684	11446.48464	5845.47984	3994.50552	0	6261	38571.75	
33	4	AL	TRUE	Birmingham-H-C-Bibb	Bibb	1	1	2	9779.52168	4495.38168	12233.8776	8821.218	5172.36072	5360.56824	6450	5232.9272	
34	4	AL	TRUE	Birmingham-H-C-Bibb	Bibb	1	2	3	9779.52168	6586.48536	13566.48	11796.9558	5930.05000	13798.2588	8211	69578.5728	
35	4	AL	TRUE	Birmingham-H-C-Bibb	Bibb	1	3	4	12717.2832	8786.66232	14094.588	14772.6948	7791.72732	1694.4708	10570	85127.244	
36	4	AL	TRUE	Birmingham-H-C-Bibb	Bibb	1	4	5	12717.2832	10755.46872	14358.126	17748.432	805.10332	16394.4708	10692	91170.768	
37	4	AL	TRUE	Birmingham-H-C-Bibb	Bibb	2											

The TRIM() function effectively eliminates unnecessary spaces within the values. Unnecessary spaces have been successfully removed.

cost_of_living_us

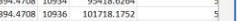
Enter  Accessibility: Investigate  

Display Settings  

=TRIM(C2)

D2	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
	Case_Id	State	IsMetro	IsMetro	Arename	County	Adult_C	Child_Count	Total_M	Housing_Cost	Food_Cost	Transportation_Cost	Healthcare_Cost	Other_Necessities_Cost	Childcare_Cost	TaxesTotal_Cost	Median_Family		
2	1	AL	TRUE	TRUE	Montgomery	Autauga	1	0	1	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	7	
3	1	AL	TRUE	TRUE	Montgomery	Autauga	1	1	2	12067.5024	5091.7078	11588.19288	8659.5564	62174.5898	6147.8298	7422	57194.3256	7	
4	1	AL	TRUE	TRUE	Montgomery	Autauga	1	2	3	12067.5024	5091.7078	11588.19288	8659.5564	62174.5898	6147.8298	7422	57194.3256	7	
5	1	AL	TRUE	TRUE	Montgomery	Autauga	1	3	4	15257.1504	9952.33924	13452.186	14035.7079	9134.3562	18802.1892	13102	94203.5328	7	
6	1	AL	TRUE	TRUE	Montgomery	Autauga	1	4	5	15257.1504	9952.33924	13452.186	14035.7079	9134.3562	18802.1892	13102	94203.5328	7	
7	1	AL	TRUE	TRUE	Montgomery	Autauga	2	0	2	10180.2942	6334.01436	12861.8868	11474.05968	9801.78524	7228.96944	6147.8298	9460	55071.6684	7
8	1	AL	TRUE	TRUE	Montgomery	Autauga	2	1	3	12067.5024	5091.7078	11588.19288	8659.5564	62174.5898	6147.8298	7422	57194.3256	7	
9	1	AL	TRUE	TRUE	Montgomery	Autauga	2	2	4	12067.5024	5091.7078	11588.19288	8659.5564	62174.5898	7228.96944	6147.8298	9460	55071.6684	7
10	1	AL	TRUE	TRUE	Montgomery	Autauga	2	3	5	15257.1504	12189.7704	14994.6	20241.1872	9445.10176	18802.1892	13210	104640.1524	7	
11	1	AL	TRUE	TRUE	Montgomery	Autauga	2	4	6	15257.1504	14917.3584	15064.2636	23163.2652	10934.31504	18802.1892	13417	111554.8596	7	
12	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	1	0	1	8616	3714.29484	10731.65256	5593.47984	4467.7518	0	6456	39578.8944	7		
13	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	1	1	2	11064	5473.96836	11522.93844	8444.00688	5991.35282	5962.7142	7097	55556.5956	7		
14	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	1	2	3	11064	8020.27812	12869.3352	11294.53344	61914.98602	15348.1992	9478	74988.9672	7		
15	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	1	3	4	14988	10699.404	13452.9648	14145.0612	9307.55928	18236.04	12996	93826.8756	7		
16	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	1	4	5	14988	13056.794	13773.354	16955.588	10176.22776	18236.04	13434	100699.52	7		
17	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	2	0	2	8676	6809.54076	12838.26	11168.95698	5611.02168	0	7820	52941.5856	7		
18	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	2	1	3	11064	8475.15886	14214.2784	10437.486	7079.8074	5962.7142	9341	70174.8576	7		
19	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	2	2	4	11064	10733.6006	14768.1084	16888.014	7894.13276	15348.1992	10867	87567.2868	7		
20	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	2	3	5	15257.1504	12189.7704	14994.6	20241.1872	9445.10176	18802.1892	13210	104640.1524	7		
21	2	AL	TRUE	TRUE	Daphne-Fairhope-Baldwin	2	4	6	15257.1504	14917.3584	15064.2636	23163.2652	10934.31504	18802.1892	13417	111554.8596	7		
22	3	AL	FALSE	TRUE	Barbour County	1	0	1	8616	3714.29484	10731.65256	5593.47984	4467.7518	0	6456	39578.8944	7		
23	3	AL	FALSE	TRUE	Barbour County	1	1	2	11064	5473.96836	11522.93844	8444.00688	5991.35282	5962.7142	7097	55556.5956	7		
24	3	AL	FALSE	TRUE	Barbour County	1	2	3	11064	8020.27812	12869.3352	11294.53344	61914.98602	15348.1992	9478	74988.9672	7		
25	3	AL	FALSE	TRUE	Barbour County	1	3	4	14988	10699.404	13452.9648	14145.0612	9307.55928	18236.04	12996	93826.8756	7		
26	3	AL	FALSE	TRUE	Barbour County	1	4	5	14988	13056.794	13773.354	16955.588	10176.22776	18236.04	13434	100699.52	7		
27	3	AL	FALSE	TRUE	Barbour County	2	0	2	8676	6809.54076	12838.26	11168.95698	5611.02168	0	7820	52941.5856	7		
28	3	AL	FALSE	TRUE	Barbour County	2	1	3	11064	8475.15886	14214.2784	10437.486	7079.8074	5962.7142	9341	70174.8576	7		
29	3	AL	FALSE	TRUE	Barbour County	2	2	4	11064	10733.6006	14768.1084	16888.014	7894.13276	15348.1992	10867	87567.2868	7		
30	3	AL	FALSE	TRUE	Barbour County	2	3	5	15257.1504	12189.7704	14994.6	20241.1872	9445.10176	18802.1892	13210	104640.1524	7		
31	3	AL	FALSE	TRUE	Barbour County	2	4	6	15257.1504	14917.3584	15064.2636	23163.2652	10934.31504	18802.1892	13417	111554.8596	7		
32	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	1	0	1	7973.92164	3050.28684	11446.48464	5845.47984	3994.50552	0	6261	38571.75	5		
33	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	1	1	2	7977.52168	4495.38168	12233.8776	8821.218	5172.36072	5360.56824	6450	52312.9272	5		
34	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	1	2	3	7977.52168	4495.38168	12233.8776	8821.218	5172.36072	5360.56824	6450	52312.9272	5		
35	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	1	3	4	12171.2832	3052.73892	10621.3892	17062.13892	15485.2176	20618.1744	8507.52024	16947.40708	10934	95184.6264	5
36	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	1	4	5	12171.2832	3052.73892	10621.3892	17062.13892	15485.2176	20618.1744	8507.52024	16947.40708	10934	95184.6264	5
37	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	2	0	2	8676	6809.54076	12838.26	11168.95698	5611.02168	0	7820	52941.5856	5		
38	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	2	1	3	11064	8475.15886	14214.2784	10437.486	7079.8074	5962.7142	9341	70174.8576	5		
39	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	2	2	4	11064	10733.6006	14768.1084	16888.014	7894.13276	15348.1992	10867	87567.2868	5		
40	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	2	3	5	15257.1504	12189.7704	14994.6	20241.1872	9445.10176	18802.1892	13210	104640.1524	5		
41	4	AL	TRUE	TRUE	Birmingham-Hc Bibb	2	4	6	15257.1504	14917.3584	15064.2636	23163.2652	10934.31504	18802.1892	13417	111554.8596	5		
42	5	AL	TRUE	TRUE	Birmingham-Hc Blount	1	0	1	7246.05684	3251.78904	11139.0764	5845.47984	3805.8578	0	6083	3741.3496	6		
43	5	AL	TRUE	TRUE	Birmingham-Hc Blount	1	1	2	8866.84084	4801.1898	12168.2568	8821.218	4950.71304	5118.81588	6172	50927.0412	6		

Ready  Accessibility: Investigate  

Count: 62862  

Remove the redundant "Ismetro" column (Column C). Replace the final result in Column D with the original values from Column C.

The screenshot shows a Microsoft Excel spreadsheet with data across multiple columns. Column C is highlighted with a red border. The data includes various columns such as Case_Id, State, Ismetro, Areaname, County, Adult_C, Child_Count, Total_MHousing_Cost, Food_Cost, Transportation_Healthcare_Cost, Other_Necessities_Cost, Childcare_Cost, Taxes, Total_Cost, and Median_Family_Income. The 'Ismetro' column contains mostly TRUE values, while the 'Areaname' column lists county names like Montgomery, Autauga, Baldwin, etc. The 'County' column also lists these names. The 'Total_MHousing_Cost' column contains numerical values like 8505.72876, 5091.70788, etc. The 'Food_Cost' column contains values like 12067.5024, 10762.13892, etc. The 'Transportation_Healthcare_Cost' column contains values like 10829.16876, 11588.19288, etc. The 'Other_Necessities_Cost' column contains values like 5737.47984, 6217.45896, etc. The 'Childcare_Cost' column contains values like 4333.81344, 6147.8298, etc. The 'Taxes' column contains values like 0, 6393, etc. The 'Total_Cost' column contains values like 39254.0532, 57194.3256, etc. The 'Median_Family_Income' column contains values like 73010.41406, 73010.41406, etc. The 'Count' value at the bottom is 31431.

1.9. Removing repeated word

Column Name: Areaname

Before:

Removing the word "County" from the 'Areaname' can enhance the overall clarity and simplicity of the name.

The screenshot shows a Microsoft Excel spreadsheet with data across multiple columns. Column D is highlighted with a red border. The data includes various columns such as Case_Id, State, Ismetro, Areaname, County, Adult_C, Child_Count, Total_MHousing_Cost, Food_Cost, Transportation_Healthcare_Cost, Other_Necessities_Cost, Childcare_Cost, Taxes, Total_Cost, and Median_Family_Income. The 'Ismetro' column contains mostly TRUE values, while the 'Areaname' column lists county names like Montgomery, Autauga, Baldwin, etc. The 'County' column also lists these names. The 'Total_MHousing_Cost' column contains numerical values like 8505.72876, 5091.70788, etc. The 'Food_Cost' column contains values like 12067.5024, 10762.13892, etc. The 'Transportation_Healthcare_Cost' column contains values like 10829.16876, 11588.19288, etc. The 'Other_Necessities_Cost' column contains values like 5737.47984, 6217.45896, etc. The 'Childcare_Cost' column contains values like 4333.81344, 6147.8298, etc. The 'Taxes' column contains values like 0, 6393, etc. The 'Total_Cost' column contains values like 39254.0532, 57194.3256, etc. The 'Median_Family_Income' column contains values like 73010.41406, 73010.41406, etc. The 'Count' value at the bottom is 31431.

After:

The `SUBSTITUTE()` function is used to substitute the word "County" with a blank space in the given text.

E2				=SUBSTITUTE(D2,"County","")	F	G	H	I	J	K	L	M	N	O	P		
1	Case_Id	State	Ismetric	AreaName	AreaName	County	Adult_C	Child_Count	Total_M	Housing_Cost	Food_Cost	Transportation_Cost	Healthcare_Cost	Other_Necessities_Cost	Childcare_Cost	Taxes_Total	
2	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	0	1	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	
3	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	1	2	12067.5024	5091.70788	11588.19288	8659.55664	6217.45896	6147.8298	7422	
4	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	2	3	12067.5024	7460.20308	12361.7772	11581.6326	7075.65816	15824.694	9770	
5	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	3	4	15257.1504	9952.23924	1452.186	14503.7076	9134.3562	18802.1892	13102	
6	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	4	5	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13469	
7	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	0	2	10180.2942	6334.09546	12861.8866	11474.95968	5983.78524	0	8237	
8	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	1	3	12067.5024	5883.31888	13589.112	14397.0372	7228.96944	6147.8298	9460	
9	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	2	4	12067.5024	9984.05268	14723.0076	17319.1128	7990.1484	15824.694	11169	
10	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	3	5	15257.1504	12067.5024	14917.7384	2024.082	21613.2652	10933.41504	18802.1892	1004
11	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	4	6	15257.1504	5934.47984	15048.4468	2024.082	21613.2652	10933.41504	18802.1892	13467
12	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	0	1	8616	3714.29484	10731.65706	5593.47984	4467.7518	0	6456	
13	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	1	2	11064	5473.96836	11522.93844	8444.00688	5992.35828	5962.7142	7097	
14	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	2	3	11064	8020.37812	12869.3352	11294.53344	6914.88608	15348.1992	9478	
15	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	3	4	14988	10699.404	14525.9648	14145.0612	9307.55928	18236.04	12988	
16	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	4	5	14988	11306.794	16037.2776	15174.9828	25890.664	11241.68184	18236.04	
17	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	2	0	2	8676	6809.54076	12838.26	11186.95968	5611.02168	0	7820	
18	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	2	1	3	11064	8475.15888	14214.2784	14037.486	7079.8074	5962.7142	9341	
19	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	2	2	4	11064	10733.60664	14768.1084	16888.014	7898.13276	15348.1992	10867	
20	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	2	3	5	14988	11304.918	15071.3112	19738.5408	10179.1728	18236.04	13173	
21	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	2	4	6	14988	16037.2776	17514.9828	15289.664	12141.68184	18236.04	14362	
22	3	AL	FALSE	Barbour County	Barbour County	Barbour	1	0	1	5856	3273.09724	10896.72876	5686.79004	3294.7668	0	5458	
23	3	AL	FALSE	Barbour County	Barbour County	Barbour	1	1	2	7776	11436.48264	14855.9658	14566.13124	4846.7361	8059.71304	5118.81588	
24	3	AL	FALSE	Barbour County	Barbour County	Barbour	1	2	3	7776	12036.794	1305.12356	10241.1872	9945.10176	18802.189	61	
25	3	AL	FALSE	Barbour County	Barbour County	Barbour	1	3	4	9672	11413.96584	12530.8248	16923.43572	7640.27712	13736.3484	7204	
26	3	AL	FALSE	Barbour County	Barbour County	Barbour	2	0	2	5904	5934.57168	17111.53008	11373.0008	4208.58144	0	6632	
27	3	AL	FALSE	Barbour County	Barbour County	Barbour	2	1	3	7776	11436.48264	14855.9658	14566.13124	4846.7361	8059.71304	5118.81588	
28	3	AL	FALSE	Barbour County	Barbour County	Barbour	2	2	4	7776	9354.42768	13811.864	16991.9136	6207.02928	11644.67908	8052	
29	3	AL	FALSE	Barbour County	Barbour County	Barbour	2	3	5	9672	11421.0462	13720.7996	19801.0812	7642.84272	13736.3484	8714	
30	3	AL	FALSE	Barbour County	Barbour County	Barbour	2	4	6	9672	11421.0462	13720.7996	19801.0812	7642.84272	13736.3484	8714	
31	3	AL	FALSE	Barbour County	Barbour County	Barbour	2	5	6	9672	13976.622	13639.788	22610.13476	8568.82836	13736.3484	8254	
32	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	1	0	1	7973.92164	3050.28684	5737.47984	3094.50552	0	6261		
33	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	1	1	2	9779.52168	4495.38168	7386.15888	5876.12652	5360.56824	6450		
34	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	1	2	3	9779.52168	6586.48536	11796.95558	5930.05008	13798.2588	8121		
35	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	1	3	4	12171.7832	7866.2214	14132.5086	14772.0948	7791.72732	16394.4708	10570	
36	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	1	4	5	12171.7832	10755.46872	14135.12626	18055.10332	8055.10332	16394.4708	9060	
37	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	2	0	2	8676	6809.54076	12838.26	11186.95968	5611.02168	0	7820	
38	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	2	1	3	8676	3714.29484	10731.65706	5593.47984	4467.7518	0	6456	
39	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	2	2	4	11064	5473.96836	11522.93844	8444.00688	5992.35828	5962.714	7097	
40	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	2	3	5	11064	8020.27812	12869.3352	11294.53344	6914.88608	15348.1992	9478	
41	4	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Bibb	2	4	6	12171.7832	13170.72976	15526.3284	23593.9116	9380.08452	16394.470	101	
42	5	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Blount	1	0	1	7246.05684	3257.7894	11329.07664	5845.47984	3805.9578	0	6063	
43	5	AL	TRUE	Birmingham-Hoover	Birmingham-Hoover	Blount	1	1	2	8886.84084	4801.1898	12168.2568	8821.218	4959.71304	5118.81588	6172	

Replace the existing data column D with the updated values.

E2				=SUBSTITUTE(D2,"County","")	F	G	H	I	J	K	L	M	N	O	P		
1	Case_Id	State	Ismetric	AreaName	AreaName	County	Adult_C	Child_Count	Total_M	Housing_Cost	Food_Cost	Transportation_Cost	Healthcare_Cost	Other_Necessities_Cost	Childcare_Cost	Taxes_Total	
2	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	1	2	12067.5024	5091.70788	11588.19288	8659.55664	6217.45896	6147.8298	7422	
3	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	2	3	12067.5024	7460.20308	12361.7772	11581.6326	7075.65816	15824.694	9770	
4	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	3	4	15257.1504	9952.23924	1452.186	14503.7076	9134.3562	18802.1892	13102	
5	1	AL	TRUE	Montgomery	Montgomery	Autauga	1	4	5	15257.1504	12182.214	13744.5984	17425.7856	9942.36396	18802.1892	13469	
6	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	0	2	10180.2942	6334.09546	12861.8866	11474.95968	5983.78524	0	8237	
7	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	1	3	12067.5024	5883.31888	13589.112	14397.0372	7228.96944	6147.8298	9460	
8	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	2	4	12067.5024	9984.05268	14723.0076	17319.1128	7990.1484	15824.694	11169	
9	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	3	5	15257.1504	12067.5024	14917.7384	2024.082	21613.2652	10933.41504	18802.1892	1004
10	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	4	6	15257.1504	5934.47984	15048.4468	2024.082	21613.2652	10933.41504	18802.1892	13467
11	1	AL	TRUE	Montgomery	Montgomery	Autauga	2	5	7	7776	1176.95558	12233.8776	18821.219	5172.36072	5360.56824	6450	
12	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	0	1	8616	3714.29484	10731.65706	5593.47984	4467.7518	0	6456	
13	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	1	2	11064	5473.96836	11522.93844	8444.00688	5992.35828	5962.714	7097	
14	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	2	3	11064	8020.27812	12869.3352	11294.53344	6914.88608	15348.1992	9478	
15	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	3	4	14988	10699.404	13452.186	14145.0612	9307.55928	18236.0	12988	
16	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	1	4	5	14988	13096.794	14214.2784	1788.26	11017.9084	7079.8074	5962.714	
17	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	2	0	2	8676	6809.54076	12838.26	11186.95968	5611.02168	0	7820	
18	2	AL	TRUE	Daphne-Fairhope-Foley	Daphne-Fairhope-Foley	Baldwin	2	1	3	11064	8475.15888	14037.486	14214.2784	14037.486	7079.80		

After removing that column, the resulting data should now appear as follows:

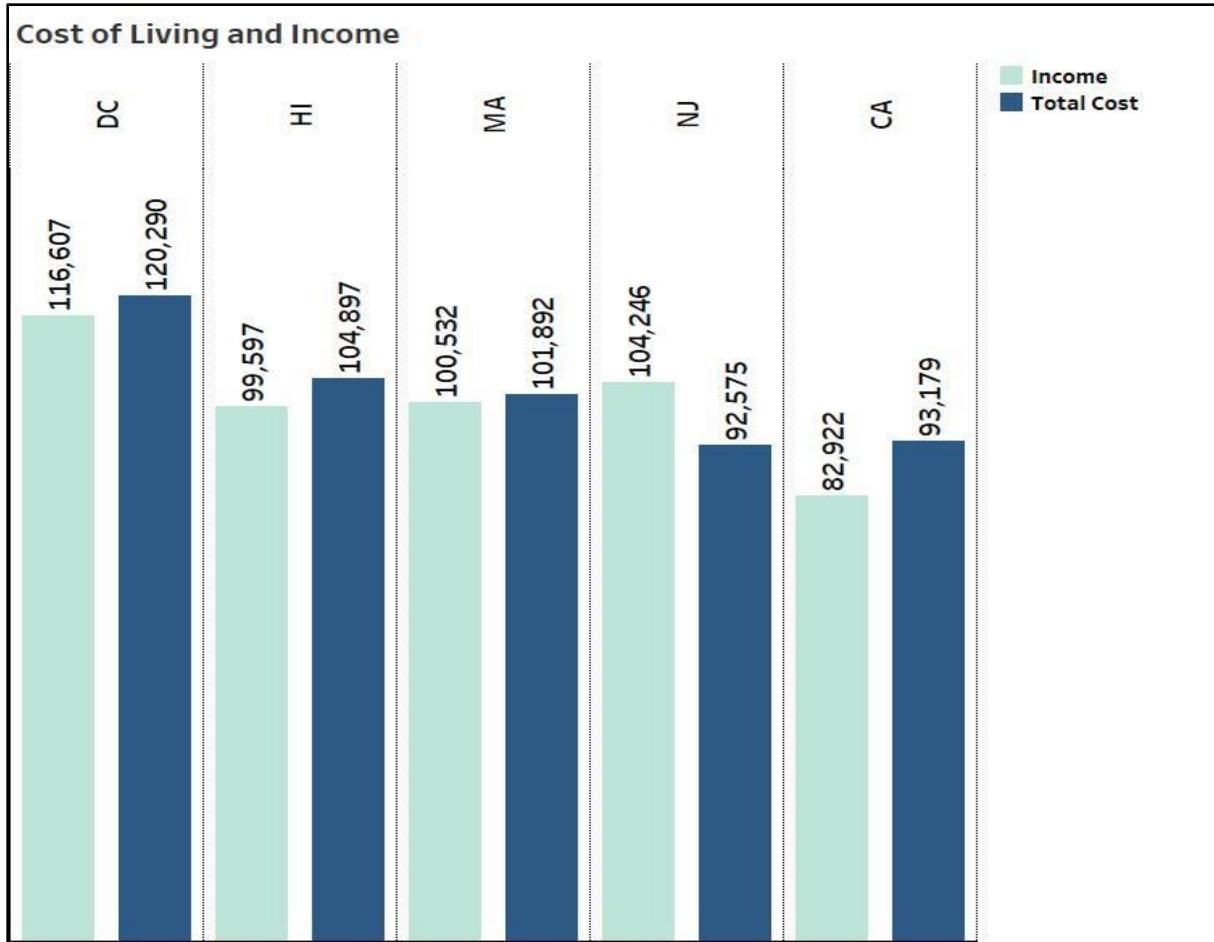
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Case_Id	State	Ismetro	Areaname	County	Adult_C	Child_Count	Total_M	Housing_Cost	Food_Cost	Transportation_Cost	Healthcare_Cost	Other_Necessities_Cost	Childcare_Cost	Taxes	Total_Cost	Me
2	1 AL	TRUE	Montgomery	Autauga	1	0	1	8505.72876	3454.91712	10829.16876	5737.47984	4333.81344	0	6393	39254.0532	
3	1 AL	TRUE	Montgomery	Autauga	1	1	2	12067.5024	5091.70788	11588.19288	8659.5564	6217.45896	6147.8298	7422	57194.3256	
4	1 AL	TRUE	Montgomery	Autauga	1	2	3	12067.5024	7460.20308	12361.7772	11581.6326	7075.65816	15824.694	9770	76141.0308	
5	1 AL	TRUE	Montgomery	Autauga	1	3	4	15257.1504	9952.23924	13452.186	14503.7076	9134.3562	18802.1892	13102	94203.5328	
6	1 AL	TRUE	Montgomery	Autauga	1	4	5	15257.1504	12182.214	13744.5984	9942.36396	18802.1892	13469	100823.52		
7	1 AL	TRUE	Montgomery	Autauga	2	0	2	10097.5024	3084.17214	12049.18008	5983.4884	6217.45896	7228.86944	6147.8298	9460	70733.5744
8	1 AL	TRUE	Montgomery	Autauga	2	1	3	10097.5024	7883.31888	13589.112	14397.0372	7228.86944	6147.8298	9460	70733.5744	
9	1 AL	TRUE	Montgomery	Autauga	2	2	4	10097.5024	9984.05268	14723.0706	17310.1128	7990.1484	15824.694	11169	89377.8696	
10	1 AL	TRUE	Montgomery	Autauga	2	3	5	15257.1504	12180.7704	14994.6	20241.1872	9945.10176	18802.1892	13210	104640.1524	
11	1 AL	TRUE	Montgomery	Autauga	2	4	6	15257.1504	14917.3584	15064.6336	23161.2652	10933.41504	18802.1892	13417	111554.8596	
12	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	1	0	1	8616	3714.29484	10731.65256	5593.47984	4467.7518	0	6456	39578.8944	
13	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	1	1	2	10964	5473.96836	11522.93844	8444.00688	5992.35828	5962.7142	7097	55556.5956	
14	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	1	2	3	10964	8020.7352	12869.3352	11294.53344	6914.98608	15348.1992	9478	74988.9672	
15	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	1	3	4	14988	10699.404	13452.9648	1445.0612	9307.55928	18236.04	12998	93826.8756	
16	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	1	4	5	14988	13096.794	13773.354	16955.588	10176.22776	18236.04	13434	100699.524	
17	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	2	0	2	8676	6809.54076	12838.236	11168.95968	5611.02168	0	7820	52941.5856	
18	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	2	1	3	10964	8475.15888	14214.2784	14037.486	7079.8074	5962.7142	9341	70174.8576	
19	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	2	2	4	10964	10733.60664	14768.1084	16888.014	7898.13276	15148.1992	10867	87567.2868	
20	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	2	3	5	14988	13104.918	15071.3112	19738.8408	10179.1728	18236.04	13173	104940.8316	
21	2 AL	TRUE	Daphne-Fairhope-Foley	Baldwin	2	4	6	14988	16037.2776	15174.9828	22580.0664	11241.68184	18236.04	13462	11128.7192	
22	3 AL	FALSE	Barbour	Barbour	1	0	1	5856	3270.0924	10890.72876	5686.79004	3294.7668	0	5458	34423.602	
23	3 AL	FALSE	Barbour	Barbour	1	1	2	7776	4770.609	11436.48264	8495.9568	5456.47984	4546.13124	4286.73616	54279.4288	
24	3 AL	FALSE	Barbour	Barbour	1	2	3	10964	7246.05684	13257.094	13197.094	7079.8074	5962.7142	9341	70174.8576	
25	3 AL	FALSE	Barbour	Barbour	1	3	4	14988	9985.404	14747.0328	14666.6988	6065.406	5360.56824	8537	61155.8636	
26	3 AL	FALSE	Barbour	Barbour	2	0	2	8676	10762.13892	15485.2176	20618.1744	8507.52024	16394.4708	10934	9518.6264	
27	3 AL	FALSE	Barbour	Barbour	2	1	3	10964	12717.2832	10762.13892	15485.2176	20618.1744	8507.52024	16394.4708	10936	101718.1752
28	3 AL	FALSE	Barbour	Barbour	2	2	4	12717.2832	13170.2796	15526.3284	23593.9116	9380.08452	16394.4708	10936	101718.1752	
29	3 AL	FALSE	Barbour	Barbour	2	3	5	12717.2832	13257.094	15526.3284	23593.9116	9380.08452	16394.4708	10936	101718.1752	
30	3 AL	FALSE	Barbour	Barbour	2	4	6	12717.2832	13257.094	15526.3284	23593.9116	9380.08452	16394.4708	10936	101718.1752	
31	3 AL	FALSE	Barbour	Barbour	2	5	7	12717.2832	13257.094	15526.3284	23593.9116	9380.08452	16394.4708	10936	101718.1752	
32	4 AL	TRUE	Birmingham-Hoover	Bibb	1	0	1	7776	3270.0924	10890.72876	5686.79004	3294.7668	0	5458	34423.602	
33	4 AL	TRUE	Birmingham-Hoover	Bibb	1	1	2	7776	4770.609	11436.48264	8495.9568	5456.47984	4546.13124	4286.73616	54279.4288	
34	4 AL	TRUE	Birmingham-Hoover	Bibb	1	2	3	7776	6989.47852	13036.794	13066.95358	5309.05056	5962.7142	7096.41	77884.5781	
35	4 AL	TRUE	Birmingham-Hoover	Bibb	1	3	4	7776	8686.62232	14045.0612	14172.0328	5309.05056	5962.7142	7096.41	77884.5781	
36	4 AL	TRUE	Birmingham-Hoover	Bibb	1	4	5	7776	10346.9416	14747.0328	14864.0216	5309.05056	5962.7142	7096.41	77884.5781	
37	4 AL	TRUE	Birmingham-Hoover	Bibb	1	5	6	7776	12046.9416	15272.0328	15443.0216	5309.05056	5962.7142	7096.41	77884.5781	
38	4 AL	TRUE	Birmingham-Hoover	Bibb	2	0	2	8676	10807.5264	12869.3352	13391.524	5309.05056	5962.7142	7096.41	77884.5781	
39	4 AL	TRUE	Birmingham-Hoover	Bibb	2	1	3	7776	12717.2832	13170.2796	15526.3284	23593.9116	9380.08452	16394.4708	10936	101718.1752
40	4 AL	TRUE	Birmingham-Hoover	Bibb	2	2	4	7776	13424.2784	14037.486	14666.6988	6065.406	5360.56824	8536.59	61155.8636	
41	4 AL	TRUE	Birmingham-Hoover	Bibb	2	3	5	7776	14121.0462	13726.7796	14867.0328	6065.406	5360.56824	8536.59	61155.8636	
42	4 AL	TRUE	Birmingham-Hoover	Bibb	2	4	6	8676	14818.8142	15485.2176	15695.20532	6065.406	5360.56824	8536.59	61155.8636	
43	4 AL	TRUE	Birmingham-Hoover	Bibb	2	5	7	8676	15584.5824	16272.0328	16449.0216	6065.406	5360.56824	8536.59	61155.8636	
44	4 AL	TRUE	Birmingham-Hoover	Bibb	2	6	8	8676	16382.3502	16979.3584	17176.3484	6065.406	5360.56824	8536.59	61155.8636	
45	4 AL	TRUE	Birmingham-Hoover	Bibb	3	0	1	7776	17080.1182	17767.4132	17957.4024	6065.406	5360.56824	8536.59	61155.8636	
46	4 AL	TRUE	Birmingham-Hoover	Bibb	3	1	2	7776	17767.4132	18454.4664	18647.4132	6065.406	5360.56824	8536.59	61155.8636	
47	4 AL	TRUE	Birmingham-Hoover	Bibb	3	2	3	7776	18454.4664	19142.4132	19339.4024	6065.406	5360.56824	8536.59	61155.8636	
48	4 AL	TRUE	Birmingham-Hoover	Bibb	3	3	4	7776	19142.4132	19839.4592	20028.4484	6065.406	5360.56824	8536.59	61155.8636	
49	5 AL	TRUE	Birmingham-Hoover	Bibb	2	2	4	8686.48064	9412.9522	10424.4624	1175.4024	6065.406	61155.8636			
50	5 AL	TRUE	Birmingham-Hoover	Bibb	2	3	5	11556.44016	11894.2164	12524.4406	2084.064	6065.406	61155.8636			
51	5 AL	TRUE	Birmingham-Hoover	Bibb	2	4	6	11556.44016	14066.2164	15653.9628	23593.9116	9384.09916	16655.1088	10060.88	30040.4884	
52	6 AL	FALSE	Bullock	Bullock	1	0	1	6384	3444.5168	11558.24156	5668.79004	3561.26844	0	5859.22	36494.0592	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Ready	Accessibility	Investigate	cost_of_living_us	Sheet1																					

Ready	Accessibility	Investigate	cost_of_living_us	Sheet1																					
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4. Data Analysis:

4.1. Top 5 states Income and Cost of Living:



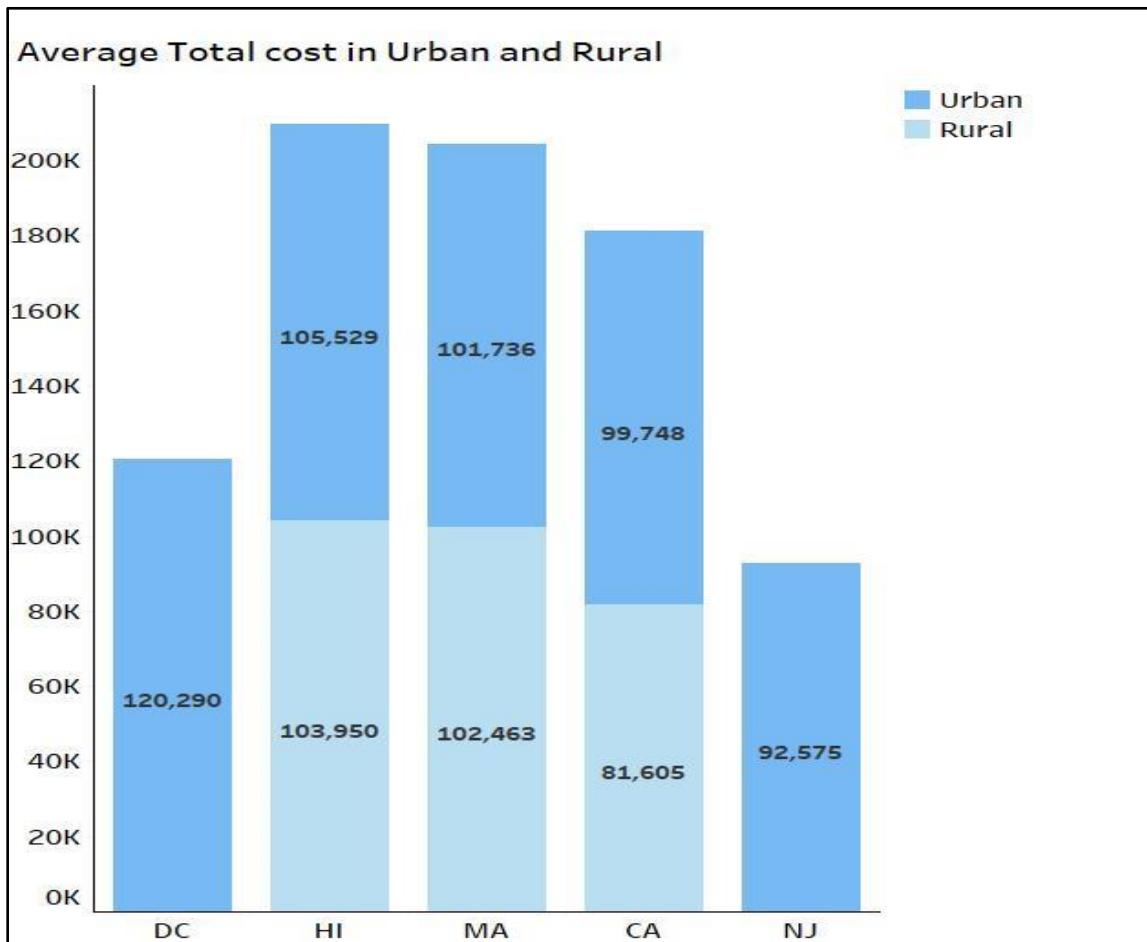
The First analysis, we performed to find the top 5 states that has high expense and high Income. We found that DC is the state that is high in both Income and Total cost, where the family earns \$ 116,607 and spends \$ 120,290, which indicates that family income is low when compared to the amount they are spending. Except for the state of New Jersey all other state expenses are high when compared to the income they receive. Only in the state New Jersey Income is high where there is high by \$11,671 compared to the Total cost of spending. As we can see in California state, the income of Family is approx. 10k less than their average spending.

Methodology:

We used a group chart to find the top 5 states that are expensive in the USA. We compared the details with the Median family column. We put the state and measures (Median income, Total Cost) in the column and measure values in the Rows. We changed the axis alias to Total Cost and Income by Right clicking on the axis and doing the edit alias. We formatted the graph by making the grid

line none and axis ruler in both column and rows to black. We used the filters category to filter the top 5 states.

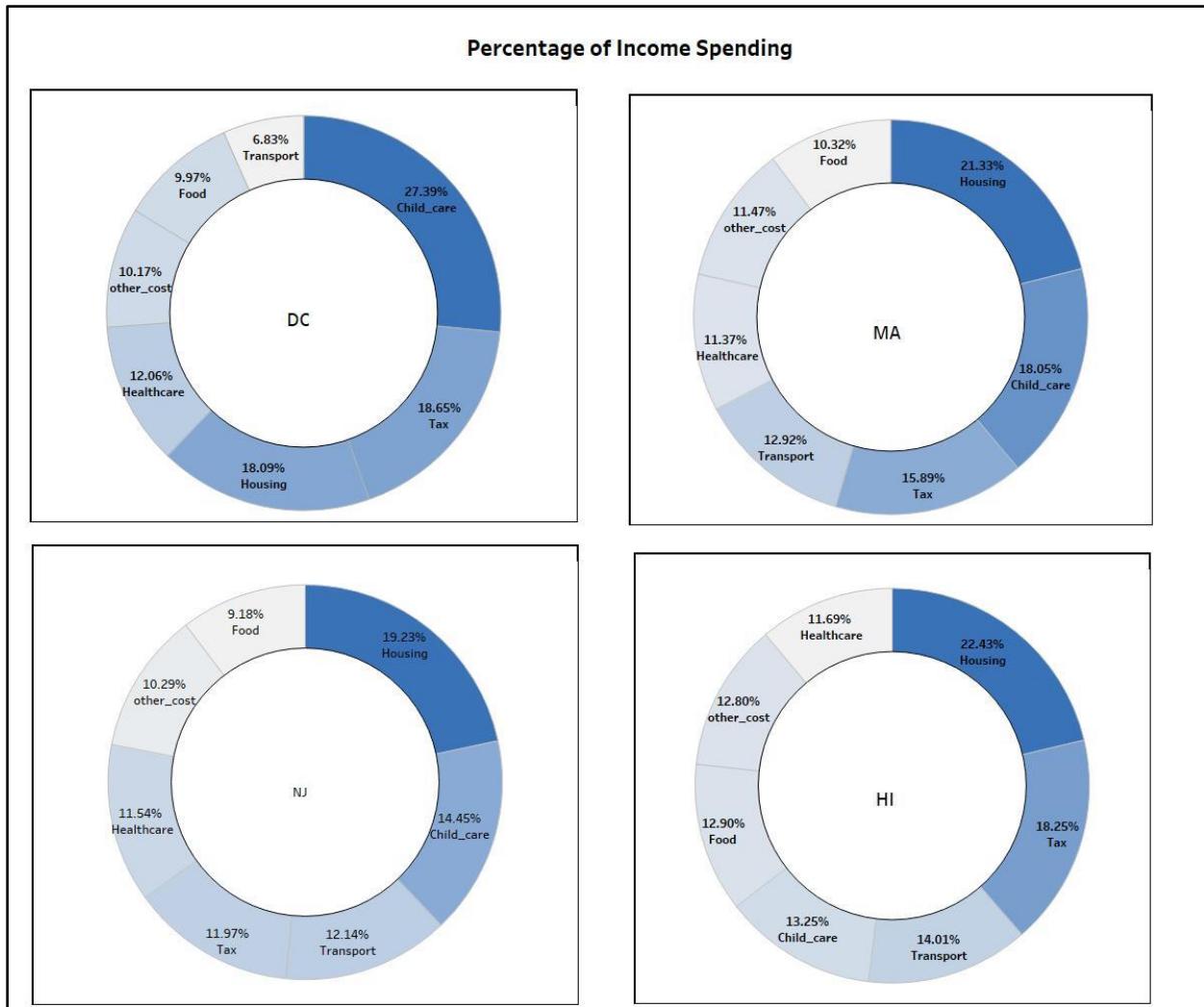
4.2. Comparing the cost of expense between the Rural and Urban:



We used stacked bar chart to see how the total cost differs in Urban and Rural County.

As we can see we don't have information about Rural County in DC and New Jersey. DC Urban city more expensive than other states in USA. And Hawaii is expensive among the rural populated states. In the other 3 states, the difference of spending between Urban and Rural is approximately 1000 to 2000 dollars, whereas in California it is almost \$10,000 difference between urban and rural. It is visibly seen that in California the Rural is much lesser than the Urban County.

4.3. Percentage of Income Spending on Different Category:



We performed an analysis to find the percentage of income spend by the Residents and families in different category.

As we can see, all the state spends on average of 18% to 22% on housing cost. But in the DC state , on average the family spends more on child_care cost which is 27.39 % which is high compared to the Housing cost in DC, because the housing cost is 18% from their income. Surprisingly the Dc state people spend 6.8% of their income on Transportation which is very low when compared to all other states.

The state of New Jersey spends 11% of their Income in Tax which is low compared to other states. On average all the state families spend 9% to 10% of their Income on Food and 11% to 12% of their Income on Healthcare. Hawaii state has the highest Transportation cost of 14% . We also can see that all the state residents have 10 to 12% of their Income spent on other necessity costs.

In MA, the family spends 21.33% of their income on housing which is high compared to DC state. They also spend 12% of their income on transportation.

Methodology:

As the donut chart is not explicitly available in the Tableau, we used the Dual Axis Concept to achieve this.

We created the first chart with various different expenses for a family namely Tax, Housing cost, Healthcare, Transport cost, child care cost, Food, Other Cost. We calculated the Percentage of Each cost by comparing it with median family income by creating calculated fields. We applied the Filters to the state data, to Filter the values by state.

Category Used: Calculated Fields, Filters

Housing $\text{IF ISNULL(SUM([Housing Cost])) OR ISNULL(SUM([Median Fam THEN NULL ELSE SUM([Housing Cost]) / SUM([Median Family Income]) * END)}$

The calculation is valid. 5 Dependencies

Food $\text{IF ISNULL(SUM([Food Cost])) OR ISNULL(SUM([Median Family THEN NULL ELSE SUM([Food Cost]) / SUM([Median Family Income]) * 100 END)}$

The calculation is valid. 3 Dependencies

Healthcare $\text{IF ISNULL(SUM([Healthcare Cost])) OR ISNULL(SUM([Median THEN NULL ELSE SUM([Healthcare Cost]) / SUM([Median Family Income] END)}$

The calculation is valid. 3 Dependencies

Tax $\text{IF ISNULL(SUM([Taxes])) OR ISNULL(SUM([Median Family Inc THEN NULL ELSE SUM([Taxes]) / SUM([Median Family Income]) * 100 END)}$

The calculation is valid. 5 Dependencies

Child_cal $\theta \text{cost_of_living_us} (\text{cost_of_living_us})$

```
IF ISNULL(SUM([Childcare Cost])) OR ISNULL(SUM([Median Fam
THEN NULL
ELSE SUM([Childcare Cost]) / SUM([Median Family Income]) *
END|
```

The calculation is valid. 8 Dependencies Apply OK

other_cost_cal $\theta \text{cost_of_living_us} (\text{cost_of_living_us})$

```
IF ISNULL(SUM([Other Necessities Cost])) OR ISNULL(SUM([Me
THEN NULL
ELSE SUM([Other Necessities Cost]) / SUM([Median Family In
END|
```

The calculation is valid. 8 Dependencies Apply OK

Transport_cal $\theta \text{cost_of_living_us} (\text{cost_of_living_us})$

```
IF ISNULL(SUM([Transportation Cost])) OR ISNULL(SUM([Media
THEN NULL
ELSE SUM([Transportation Cost]) / SUM([Median Family Incom
END|
```

The calculation is valid. 8 Dependencies Apply OK

Once the Calculated fields are created for each Costs, we placed those in the Angle to differentiate the angle based on its percentage. We also kept the measure names on the label to differentiate the pies.

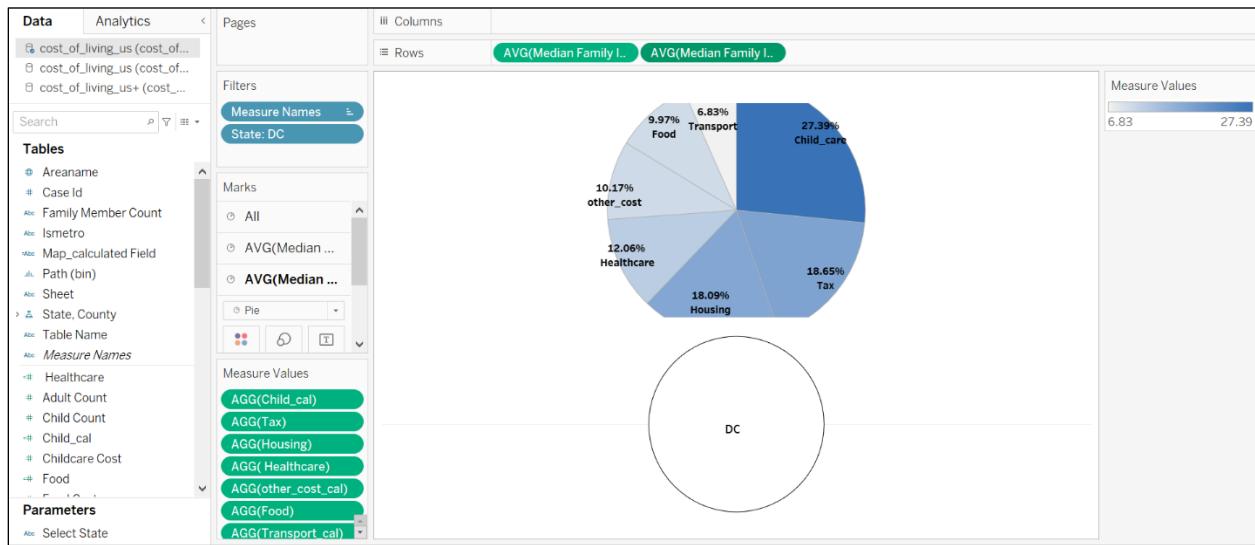
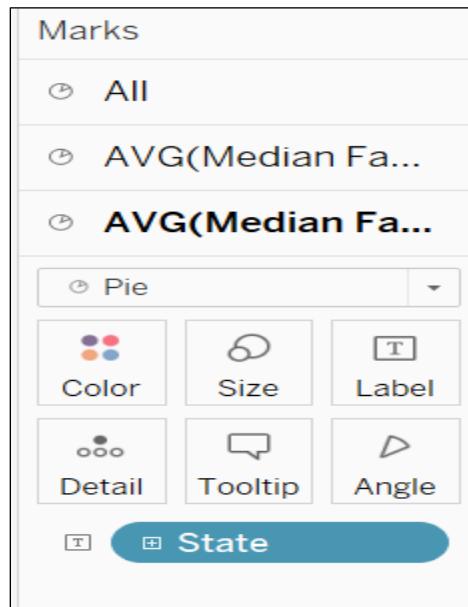
Marks

- Color
- Size
- Label
- Detail
- Tooltip
- Angle
- State**

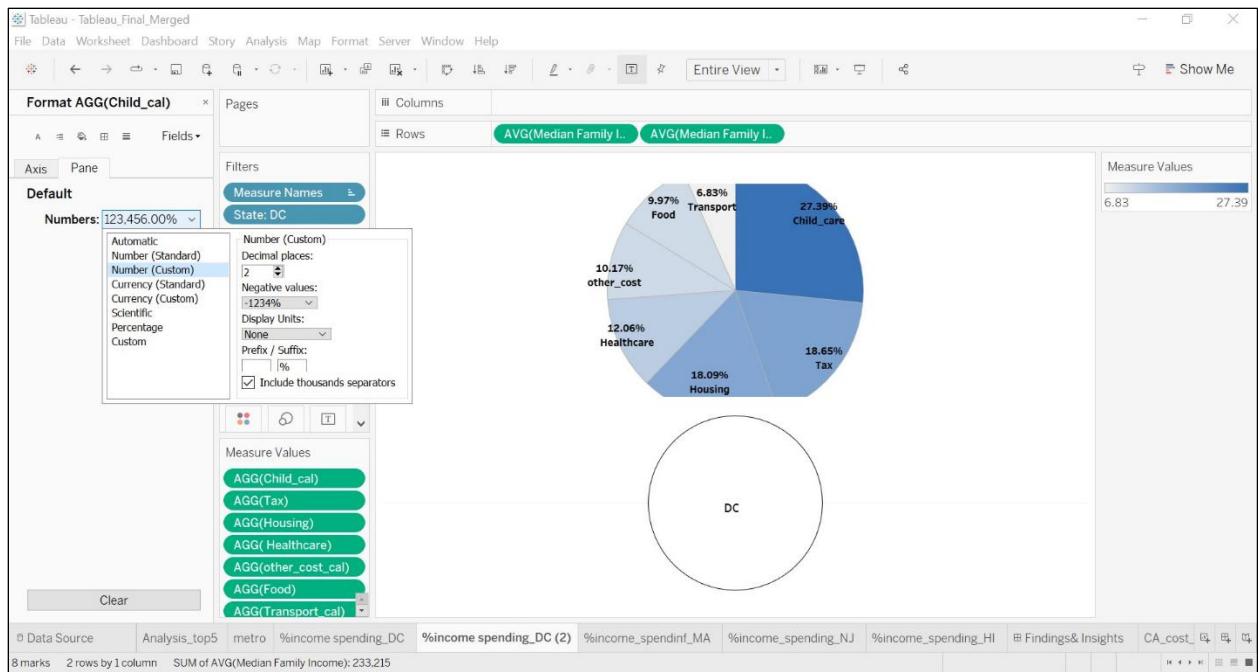
Measure Values

- AGG(Housing)
- AGG(Child_cal)
- AGG(Tax)
- AGG(Transport_cal)
- AGG(Healthcare)
- AGG(other_cost_cal)
- AGG(Food)

2nd Pie chart: We create the second pie chart with only Average Median Income and Changed the Automatic Graph setting to Pie Chart and changed the Color to white and placed the Label for the median family income to display the income.



After all the calculation is done, we formatted the Measure values to display the percentage with 2 decimal places and with percentage symbol.

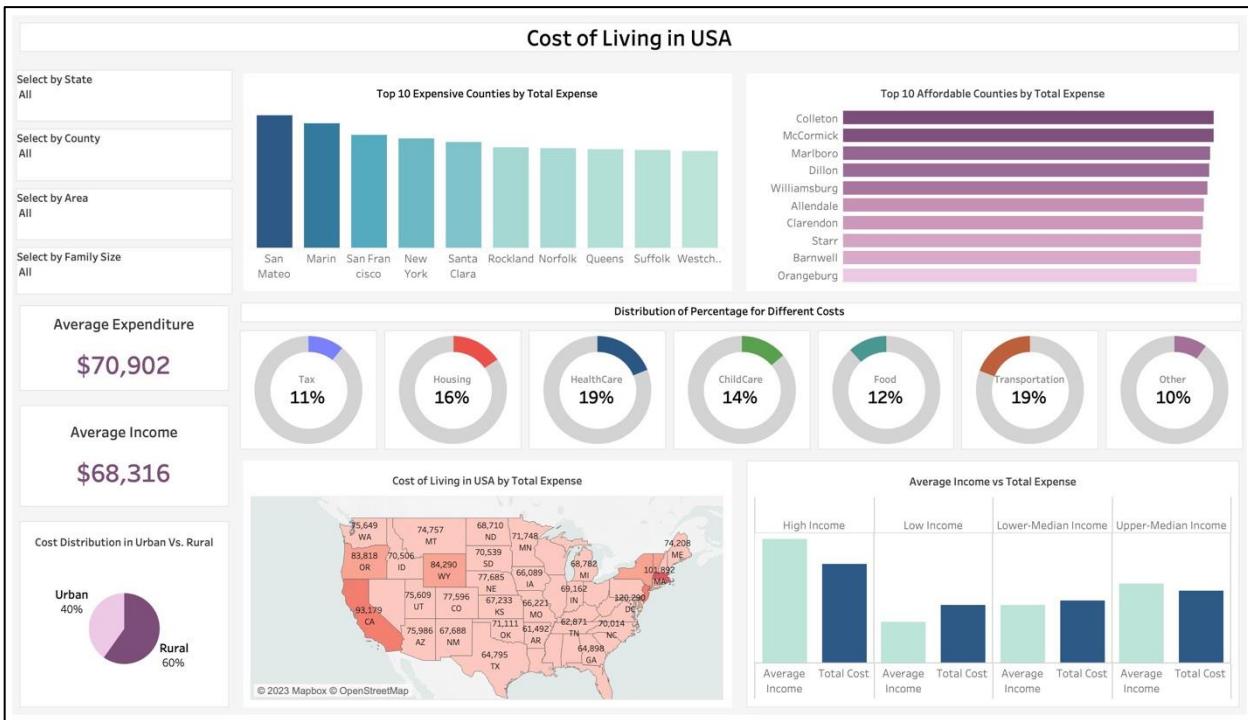


Once everything is done, we enabled the Dual axis in the second value of Average median family income in the Rows. We have filter by state to show the difference of percentage spending in each state.

And we have repeated the same steps for other states, MA, NJ, HI.

Once donut chart is created for all 4 states, we created that as a dashboard for better alignment and better understanding. We used horizontal and vertical containers to align the different charts perfectly.

5. Interactive Dashboard:



Overview:

The Cost of Living in the USA dashboard offers a comprehensive analysis of financial dynamics across states and counties. The user-friendly interface on the left side provides four filters—State, County, Area, and Family Size—enabling users to tailor their analysis. Two key performance indicators (KPIs), Average Expenditure and Average Income, are prominently displayed, highlighting the prevalent scenario where expenses exceed income in the USA. Cost Distribution is depicted through a pie chart, revealing that rural areas generally experience higher overall expenses compared to urban areas. On the right side, two charts showcase the Top 10 most expensive and affordable counties, allowing users to discern the financial landscape at a granular level. Donut charts provide a detailed breakdown of expenditure percentages for different categories, such as Tax, Housing, Healthcare, Childcare, Food, Transportation, and Other Necessity Costs. These charts offer valuable insights into spending patterns, with Healthcare and Transportation emerging as the predominant expense categories. Geographical insights are conveyed through a Geo Map, emphasizing the cost of living across states. The Average Income vs Total Expense bar chart unveils nuanced findings, indicating that higher-income groups tend to have higher expenses, but their income levels are also correspondingly higher.

We've added additional filters to elevate user interaction, facilitating exploration of the percentage distribution of costs for specific counties. Users can distinguish cost distributions between Urban and Rural areas and gain insights into how high-income and low-income groups allocate their expenses. Furthermore, users can effortlessly extract specific details from the geo map by selecting

a state, offering a seamless way to access comprehensive information throughout the entire dashboard.

Methodology:

In generating insights for the "Top 10 Expensive Counties" and "Top 10 Affordable Counties" charts, we employed a ranking methodology. Calculated fields named "Rank Expensive Total Cost & Rank Affordable Total Cost" were created for both charts respectively, calculating the county's rank based on total expense. For the "Top 10 Expensive Counties," the ranking was done in descending order, while for the "Top 10 Affordable Counties," the ranking was in ascending order as depicted in the screenshot below.

Rank Expensive Total Cost cost_of_living_us (cost_of_living_us) X
Results are computed along Table (across).
RANK([Average Total Cost], 'desc')

Rank Affordable Total Cost cost_of_living_us (cost_of_living_us) X
Results are computed along Table (across).
RANK([Average Total Cost], 'asc')

This systematic approach ensures accurate representation and easy identification of counties with the highest and lowest total expenses.

For each donut chart, two additional calculated fields were created to determine the percentage of each category. For instance, the "% of Food" field calculates the food percentage out of the total expense, while the "% of Not Food" field illustrates the remaining portion, as shown in the screenshot below. The same approach was followed for other categories.

% of Food cost_of_living_us (cost_of_living_us) X
AVG([Food Cost]) / AVG([Total Cost])

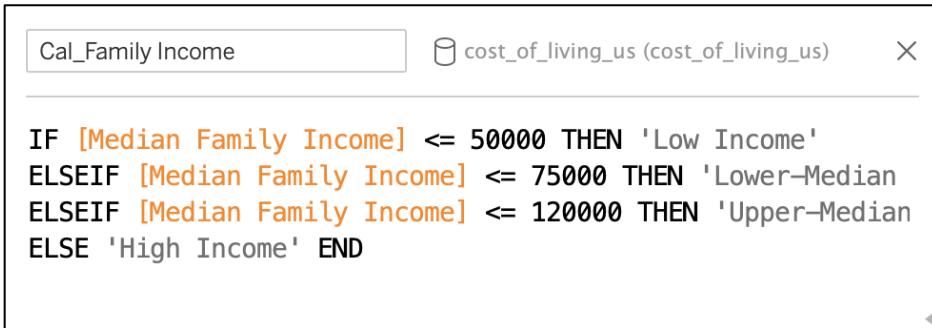
% of not Food cost_of_living_us (cost_of_living_us) X
1 - AVG([Food Cost]) / AVG([Total Cost])

This approach provides a detailed and clear breakdown of cost distribution within each category, enhancing the precision and interpretability of the dashboard.

To analyze the relationship between average income and total expense, we created a calculated field based on our assumptions, named "Cal_Family Income." This field classified family incomes into four distinct groups based on the provided median family income data.

- **Low Income:** For family incomes up to \$50,000.
- **Lower-Median Income:** For family incomes between \$50,000 and \$75,000.
- **Upper-Median Income:** For family incomes between \$75,000 and \$120,000.
- **High Income:** For family incomes exceeding \$120,000.

Here, you can observe how we created the calculated field, as shown in the screenshot below.



The screenshot shows a calculated field editor window. At the top, there is a text input field containing "Cal_Family Income". To its right is a dropdown menu set to "cost_of_living_us (cost_of_living_us)" and a close button "X". Below this, the main area contains the following code:

```
IF [Median Family Income] <= 50000 THEN 'Low Income'  
ELSEIF [Median Family Income] <= 75000 THEN 'Lower-Median'  
ELSEIF [Median Family Income] <= 120000 THEN 'Upper-Median'  
ELSE 'High Income' END
```

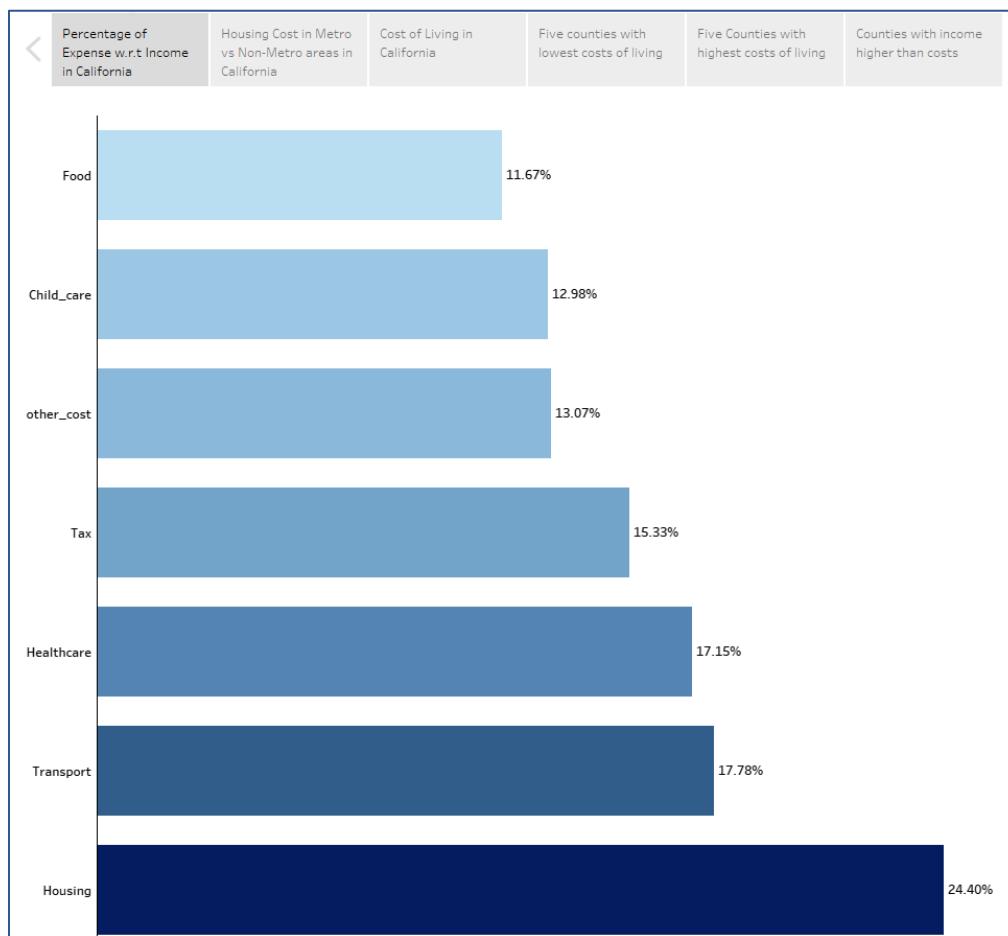
The assumption of these income groups allowed us to create a clearer visual representation of how total expenses vary across different income brackets. This grouped bar chart not only illustrates the average income and total expense but also provides a comparative analysis, demonstrating the financial dynamics for each income group. By categorizing family incomes, users can discern patterns, helping to understand how varying income levels correlate with overall expenses in the USA.

6. Story Telling

California is known to have diverse views and favorable weather, making it a comfortable yet adventurous place to live in. From hiking on the trails to surfing at the beaches, there is a wide variety of activities for everyone to enjoy. California is also a fashion and entertainment destination. Multiple major theme parks such as Disneyland, Knott's Berry Farm, and movie studios like Paramount Pictures, Universal Studios, and Warner Bros Studio are located within the Golden State. It offers plenty of opportunities as it is home to tech giants in the bay area, such as Google, Apple, Oracle, and so on (Brown, 2022).

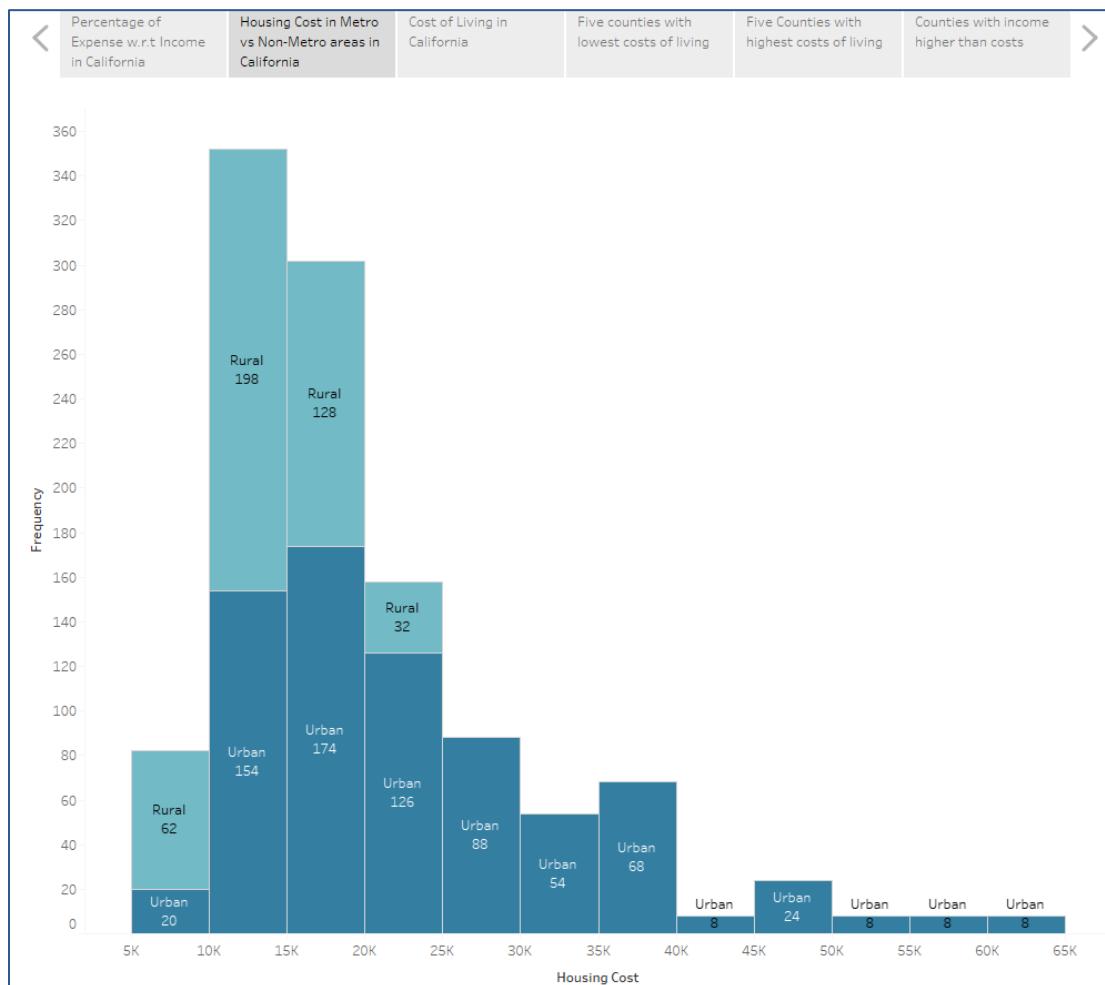
Although California has much to offer, it is worth noting that “people leaving California outnumbered newcomers by more than 700,000 between April 2020 and July 2022” (Keight, 2023). On the surface, it may have seemed that Covid-19 pandemic played a role in the relocations due to job losses and work-from-home culture. However, according to the Department of Finance, “California has been losing its residents to other states every year since 2000” (Keight, 2023). The increasing costs of living, housing, and transportation have led many people to move to more affordable cities and states.

Conducting a comprehensive analysis on a dataset focused on the Cost-of-Living provides insights into the income distribution and overall expenses associated with residing in various counties across California. The findings from this analysis serve as a pivotal foundation for informed policymaking, enabling leaders to devise strategies that aim to enhance the quality of life for residents statewide.



This bar chart highlights the financial allocations of Californians, showcasing the distribution of their income across various essential categories. On average, Californians spend 24.4 percent of their income on housing, which is a significant portion. Transportation follows closely behind, consuming 17.78 percent of income, emphasizing how much Californians commute for their daily lives. Health care, at 17.15 percent, emerges as another substantial expenditure, reflecting the prioritization of well-being within budgetary considerations. Californians spend 15.33 percent on tax, 13.07 percent on miscellaneous items, 12.98 percent on childcare, and 11.67 percent on food.

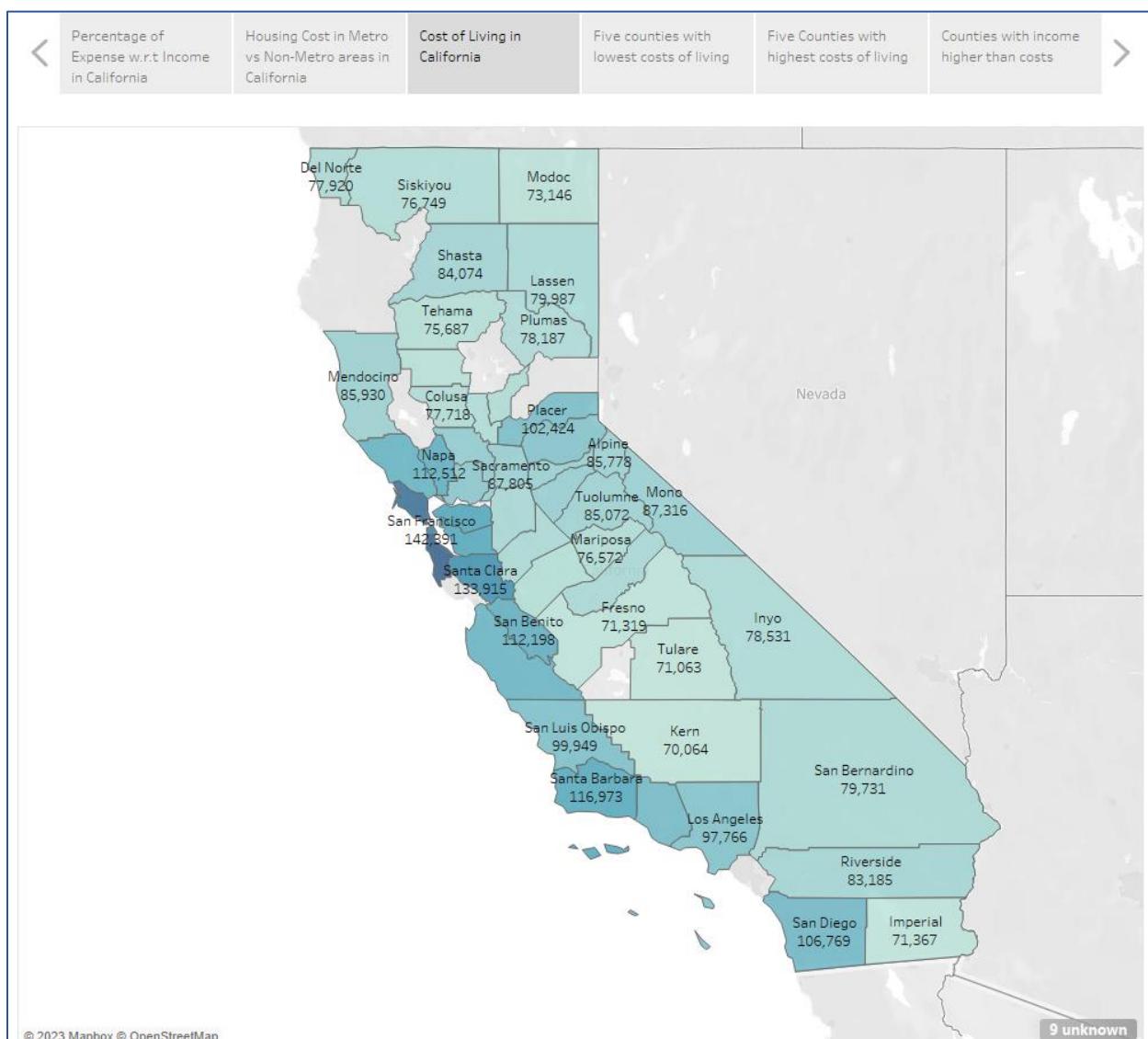
However, the cumulative total of these percentages surpasses 100 percent, specifically reaching 112.38 percent. This suggests that, on average, many families in California may be allocating more of their income than they earn to meet these essential needs. This discrepancy highlights the financial strain experienced by households in the state, urging a closer examination of economic policies, housing affordability, and the overall cost of living to ensure the well-being and financial stability of Californians.



As we learn from the previous bar chart, housing cost stands out as the most significant cost-of-living component. Putting a roof over one's head accounts for almost a quarter of family income. This underscores the considerable financial burden associated with accommodation in the state.

This histogram shows the frequency of different housing cost ranges between urban and rural areas. The range with the highest frequency is between \$10,000 and \$15,000 with 198 respondents living in rural areas and 154 in urban areas. The range with the second highest frequency is between \$15,000 and \$20,000 with 128 respondents living in rural areas and 174 in urban areas. It is worth noting that only urban residents pay for housing costs of \$25,000 and above annually.

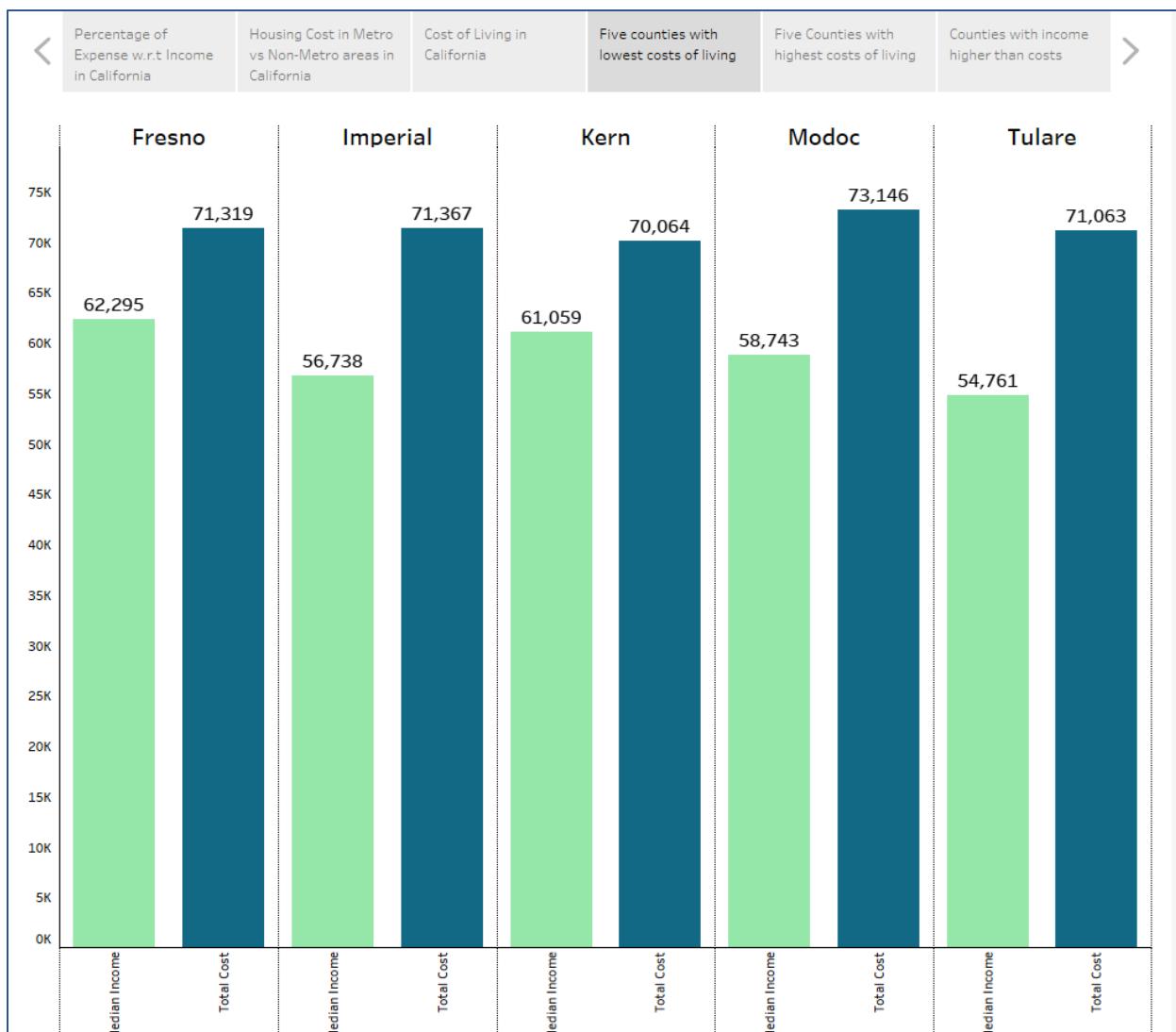
The histogram does not differentiate between expenditures related to rental properties and those associated with owned homes. Stated in the article “Is Moving to California Worth It?”, “Home prices in California are so high that statewide only 16% of residents can actually afford to be homeowners, according to the California Association of Realtors” (Zack, 2023). This statistic suggests that a significant portion of the documented housing expenses in the histogram is likely attributed to rental properties, given the challenge Californians face in achieving homeownership.



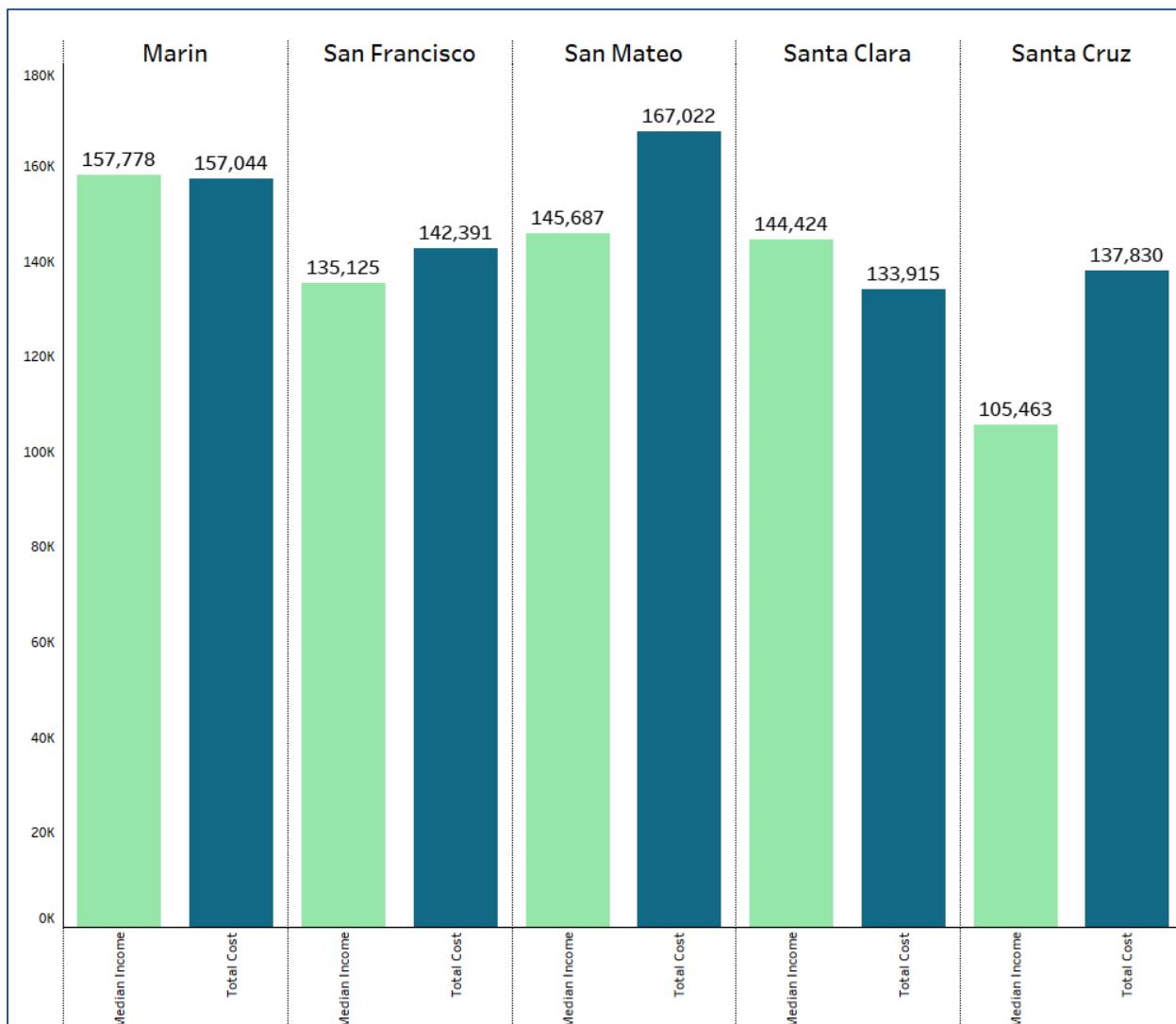
We now look into the cost of living across various counties in California. The presented map employs varying shades to visually convey the economic spectrum, where darker hues correspond to higher total costs. Overall, this underscores the economic disparity that exists within the state.

As illustrated in this map, the five counties that have the lowest cost of living are Tulare (\$71,063), Kern (\$70,064), Fresno (\$71,319), Imperial (\$71,367), and Modoc (\$73,146). In contrast, the top five most expensive counties to live in are San Mateo (\$167,022), Marin (\$157,044), San Francisco (\$142,391), Santa Cruz (\$137,830), and Santa Clara (\$133,915). The spending gaps between the top five and the bottom five counties are about \$43,000 to \$103,000.

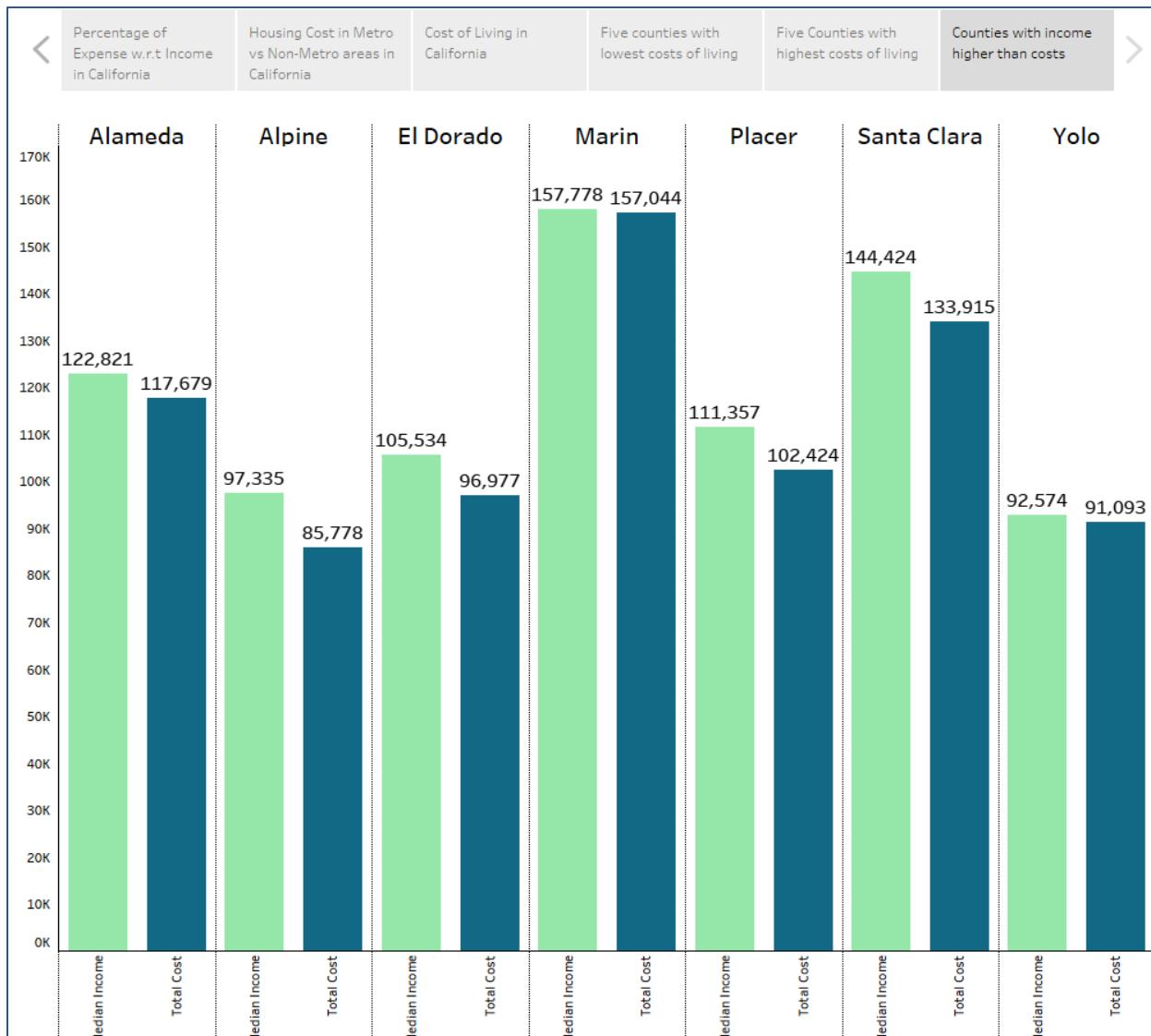
It is worth noting that the top five most expensive counties are clustered in Northern California where many notable big-tech companies are, such as, Google, Apple, Intel, Oracle, and so on. Tech jobs attract talent and an abundant source of money into the regions, which, in turn, drove up the housing prices.



Looking at the bar chart that compares the median family income to the total costs of the five counties with the lowest costs of living, we realize that having the lowest costs of living does not equate to affordability. The median family incomes in these seemingly budget-friendly counties fall short, consistently trailing behind the total expenses incurred by residents. This misalignment implies that, in these counties, individuals and families are grappling with a financial conundrum where their expenditures outweigh their earnings by around \$9,000 to \$17,000 a year.



The trend of living costs surpassing family incomes extends its grasp to three of the top five most expensive counties, revealing economic challenge faced by residents in these affluent regions. In San Francisco, the average total cost is \$7,000 higher than median income. In San Mateo, the average total cost is \$22,000 higher than median income. In Santa Cruz, the average total cost is \$32,000 higher than median income. Meanwhile, residents of Marin County and Santa Clara find themselves in a somewhat advantageous position, earning slightly more than what they spend. However, the margin is relatively narrow, with only less than \$1,000 in Marin, and \$11,000 in Santa Clara.



Despite having a high cost of living, California is still an attractive place to reside in for many reasons. Individuals and families are drawn by the mild weather, lucrative job opportunities, diverse cultures, and active lifestyle. The accompanying bar chart shows the counties where median incomes not only weather the high cost of living but also surpass it. Alameda, Alpine, El Dorado, Marin, Placer, Santa Clara, and Yolo emerge as beacons of economic balance, where residents enjoy a median income that outpaces the associated living expenses. For those seeking a comfortable and economically sustainable living experience in the Golden State, these counties present promising options.

7. Limitation and Future work

Limitations:

- The absence of date-specific data
The data does not include specific dates, making it difficult to analyze trends over different months or quarters or years.
- Restricted coverage to a limited number of counties
The dataset only covers 1,877 out of the total 3,143 counties in the US, so we cannot analyze trends in the rest of the counties.

Future Works:

- Integration of API ((Application Programming Interface)
Our dataset contains historical data. If the trend changes, we cannot analyze the market accurately. Therefore, in the future, partnering with EPI (Economic Policy Institute) to integrate their API into our dashboard will enable us to analyze the current trend in real time.
- Implementation of debt reduction strategies
From our analysis, we found that people with low income and lower median earnings spend more than they earn. In the future, we can develop strategies to reduce debt for these individuals.

8. Conclusion

Based on the analysis, our conclusions are:

- Hawaii is considered the most expensive place to live for individuals or couples.
- While for family sizes such as one parent with one child(1p1c), one parent with two children, one parent with three children, one parent with four children, two parents with one child, two parents with two children, two parents with three children, and two parents with four children, Washington, D.C. is the most expensive.
- On the other hand, living in Ohio is affordable, especially for a single person. And for bigger families, like two adults with four children(2p4c), Mississippi is the most affordable place.
- Los Alamos is a great place where people spend only half of what they earn. On the other hand, in Bronx County, people spend more money than they make.

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