Superstore Sales Analysis Demonstration

Identifying the patterns in our products, regions, categories and customer segments for efficiency and profit optimization with SQL

With the constant advancement of technology and innovation, having clear cut databases and possessing departments to breathe life into interpreting them will set you in the top realm of efficiency. Execution is important but we need great inputs to yield even better outputs. There is a necessity to catch up with the growing demand and fierce competition in the market . That is why we need leverage insights to provide more value to the customer as value is the key to everything. Our analysis in question will be carried with Excel, SQL and finally Tableau. Excel will serve as first repository for our data, SQL will give meaning to our data and Tableau will give a clear face to our data. The following sales performance analysis will follow the 6 steps of Data Analysis which are: Ask, Prepare, Process, Analyze, Share and Act.

Step 1: Ask

In this step, we will define the business problem given to us which was interpreted as “What are the best products, regions, categories and customer segments for the Superstore to target or avoid in order to increase profitability?”

Business objectives:

How can we optimize our profits?

2. What are the emerging trends that we can we identify?

3. How can we take these insights to build recommendations ?

Deliverables:

1. A clear summary of the business objectives.

2. A full documentation of all the data cleaning, manipulation and analysis.

3. A dashboard with visualizations and main outcomes.

4. Recommendations based on our insights and analysis.

Step 2: Prepare

In this phase, we will identify and assess the features of our Superstore Dataset:

1. The data is publicly available through Kaggle under https://www.kaggle.com/datasets/vivek468/superstore-dataset-final

2. It comes with 9995 rows with 9994 being pure data and the other one row being the column headers. It contains data recorded between the 3rd of January 2014 (the first order date) to the 5th of January 2018 (the last shipping date). (The last order date is the 30th of December 2017, so we will instead use the order dates range to represent our 4 years of business)

3. It contains the data of 793 customers.

4. The data contains the 21 columns namely; Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID , Customer Name, Segment, Postal Code, City, State, Country, Region, Product ID, Category, Sub-Category, Product Name, Sales, Quantity, Discount and Profit.

5. The only limitations of our dataset that I could mention is that the most recent data point was almost 6 years ago. So our data is not current. However, our data is quite reliable, original, comprehensive and is cited.

Moving on to the data processing, we will use Excel for cleaning

Step 3:Process:

We will process and clean our data with the help of Excel as the file is already a CSV file so a look through of our data with Excel can be ideal to:

1. Observe our data

2. Check for missing data with the help of conditional formatting

3. Remove duplicate rows

4. Correctly format columns for easy SQL analysis

While exploring our dataset, we can perform and notice the following;

(a) Our data looks correct and consistent. Everything looks well structured for further analysis it just needs a little editing.

(b) With the use of conditional formatting, which is a technique to highlight certain values of interest, we set our new formatting rule to be 'Format only cells that contain'. Then we added on it to be "Format only cells with': Blanks'. Our color of choice was yellow. Then we zoomed out to have a birds eye view of our dataset. We can confirm that our dataset contains no missing values. Another method would be to go to the 'Data' section of Excel and hit filters and filter rows for blanks.

(c) With the command 'remove duplicates', there was no instance where the data was duplicated with all the exact parameters for a customer in all columns. So all the rows had some variety to it hence returning no duplicate data for our data set.

(d) Finally, made sure Order Date and Ship Date were well formatted by formatting it to dates (which they already were) and formatted the Sales and Profits columns from numbers to currencies since we our talking about financials. The discount column was not formatted to currency as in this context, the discount is more of a percentage value. So discount will later be formatted from number to percentage by just multiplying it by 100.

Now our dataset is ideal for analysis to discover relationships, trends and patterns that will give us a competitive edge and completely solve our business objectives.

Step 4 : Analyze

For the analysis part, we will string out the most important components of our data to answer our business objectives.

1. **What are total sales and total profits of each year?**

The years were grouped by order date, so we can observe data for the year 2014, 2015, 2016 and 2017.

```
SELECT
  order_year as year,
  sum(Profit) as total_profit,
  sum(sales) as total_sales
FROM
  faizi.superstore
group by
  year
order by
  year;
```

	year	total_profit	total_sales
▶	2014	49021	481771
	2015	60895	464455
	2016	80122	601314
	2017	92772	725060

Total sales and Total profits for each year

The data above shows how the profits over the years have steadily increased with each year being more profitable than the other despite having a fall in sales in 2015, our financial performance

2. What are the total profits and total sales per quarter?

This is done to see the periods where our company has been the most impactful. So that in the future, we can tailor our operations where we see fit like maximizing our resources like advertisement, customer service and our overall presence during those times of the year. This is solved with the code below;

```sql
SELECT
CASE
WHEN order_month IN (1,2,3) THEN 'Q1'
WHEN order_month IN (4,5,6) THEN 'Q2'
WHEN order_month IN (7,8,9) THEN 'Q3'
ELSE 'Q4'
END AS quarter,
SUM(sales) AS total_sales,
SUM(profit) AS total_profit
FROM superstore
GROUP BY  quarter
ORDER BY total_profit desc
```

	quarter	total_sales	total_profit
▶	Q4	868473	109487
	Q3	606856	70800
	Q2	439973	54840
	Q1	357298	47683

Most performing quarters from 2014–2017

The data above shows that the period of October, November and December are our best selling months and our months where we bring in the most profit. Just by seeing this table, we can develop operation strategies pretty nicely as there is a clear buildup like a stock market rally from January to December then it dumps around the first 3 months. Let's get into the regions.

3. What region generates the highest sales and profits ?

```sql
SELECT
  region,
  SUM(sales) AS total_sales,
  SUM(profit) AS total_profits
FROM
  superstore
GROUP BY
  region
ORDER BY
  total_profits DESC;
```

region	total_sales	total_profits
West	713528	105986
East	672246	90672
South	389012	46010
Central	497814	40142

Total Profits and Sales by Region

We can observe above that the West region is the one with the most sales and brings us in the highest profits. The East region is pretty good looking for our company too. Those 2 regions are definitely areas of interest if we want to maximize our profits and expand our business. Concerning the South region, we do not gain a lot of revenue but still the profits are there. It is the Central region that is quite alarming as we generate way more revenue than the South region but do not make at least the same profits over there. The Central region should be on our watchlist as we could start to think on how we could maybe put our resources in the other regions instead. Let's observe each regions profit margins for further analysis with the following code:

```
SELECT region, ROUND((SUM(profit) / SUM(sales))
FROM superstore
GROUP BY region
ORDER BY profit_margin DESC
```

region	profit_margin
West	14.85
East	13.49
South	11.83
Central	8.06

Profit margins by region

Profit margins are a measure of a company's profitability and are expressed as the percentage of revenue that the company keeps as profit. So we can see that the West and East are really good. The South region despite almost selling less than half of the West region in revenue has a good profit margin of 11.93% which is great.

However the Central region is still not convincing. Let's move on and try to pinpoint the data in each region.

4. What state and city brings in the highest sales and profits ?

States

Firstly, Let's discover what states are the top 10 highest and lowest and then we will move on to the cities. For the states, it can be found with the following code:

```
SELECT
  State,
  SUM(Sales) as Total_Sales,
  SUM(Profit) as Total_Profits,
  ROUND((SUM(profit) / SUM(sales))* 100,2)
as profit_margin
FROM
  superstore
GROUP BY
  State
ORDER BY
  Total_Profits DESC
LIMIT
  10;
```

	State	Total_Sales	Total_Profits	profit_margin
▶	California	450611	74653	16.57
	New York	309491	73488	23.74
	Washington	136606	32963	24.13
	Michigan	76002	24335	32.02
	Virginia	70312	18464	26.26
	Indiana	53469	18344	34.31
	Georgia	48305	15930	32.98
	Kentucky	36598	11202	30.61
	Minnesota	29865	10828	36.26
	Delaware	27039	9838	36.38

Top 10 State's total sales and profits with their profit margins

The decision was to include profit margins to see this under a different lens. The data shows the top 10 most profitable states. Besides we can see the total sales and profit margins. Profit margins

are important and it allows us to mostly think long-term as an investor to see potential big markets. In terms of profits, California, New York and Washington are our most profitable markets and most present ones especially in terms of sales. Which, are so high that it would take so much for the profit margins to be higher. However the profits are great and the total sales show that we have the best part of our business share at those points so we need to boost our resources and customer service in those top states.

Let's observe our bottom 10 States:

```
SELECT State, SUM(Sales) as Total_Sales,
 SUM(Profit) as Total_Profits
FROM superstore
GROUP BY State
ORDER BY Total_Profits ASC
LIMIT 10;
```

State	Total_Sales	Total_Profits
Texas	169551	-25519
Ohio	76612	-17061
Pennsylvania	114922	-15433
Illinois	79005	-12030
North Carolina	55549	-7490
Colorado	31287	-6489
Tennessee	30423	-5284
Arizona	34286	-3442
Florida	88882	-3396
Oregon	17282	-1204

Bottom 10 State's total sales and profits

Our least profitable markets are listed above. The top 3 are Texas, Ohio and Pennsylvania. Texas and Pennsylvania are especially alarming as they have more than 100,000 in sales with Texas having more sales than Washington (which made $33402.70 in profits) but made a loss of $25729.29.

Cities

The top cities are found with the code below:

```
SELECT
  city,
  SUM(Sales) as Total_Sales,
  SUM(Profit) as Total_Profits,
  ROUND((SUM(profit) / SUM(sales))* 100,2)
as profit_margin
FROM
  superstore
GROUP BY
  city
ORDER BY
  Total_Profits DESC
LIMIT
  10;
```

	City	Total_Sales	Total_Profits	profit_marg
▶	New York City	255278	61607	24.13
	Los Angeles	173174	29803	17.21
	Seattle	117785	28856	24.50
	San Francisco	110938	17162	15.47
	Detroit	42309	13113	30.99
	Lafayette	25001	9999	39.99
	Jackson	24905	7549	30.31
	Atlanta	17200	6994	40.66
	Minneapolis	16871	6824	40.45
	San Diego	47115	6310	13.39

Top 10 Cities' total sales and profits with their profit margins

The top 3 cities that we should focus on are New York City, Los Angeles and Seattle.

The bottom 10 cities are:

```
SELECT City,
 SUM(Sales) as Total_Sales,
SUM(Profit) as Total_Profits
FROM superstore
GROUP BY City
ORDER BY Total_Profits ASC
LIMIT 10;
```

	City	Total_Sales	Total_Profits
▶	Philadelphia	107495	-13723
	Houston	64388	-10037
	San Antonio	21848	-7300
	Lancaster	9820	-7253
	Chicago	47767	-6457
	Burlington	21623	-3641
	Dallas	19752	-2843
	Phoenix	10817	-2799
	Aurora	11618	-2669
	Jacksonville	44594	-2314

Bottom 10 Cities' total sales and profits with their profit margins

The bottom 3 are Philadelphia, Houston and San Antonio. We have 2 cities from Texas in our top 3 so it is clear that we have start redesigning some strategies and how we operate in those cities.

5. What category generates the highest sales and profits in each region and state ?

First, let's observe the total sales and total profits of each category with their profit margins:

```
SELECT
   category,
   SUM(sales) AS total_sales,
   SUM(profit) AS total_profit,
   ROUND(SUM(profit)/SUM(sales)*100, 2) AS profi
FROM superstore
GROUP BY category
ORDER BY total_profit DESC;
```

	category	total_sales	total_profit	profit_margin
▶	Technology	835966	145361	17.39
	Office Supplies	703580	120474	17.12
	Furniture	733054	16975	2.32

Categories with their total sales, total profits and profit margins

Out of the 3, it is clear that Technology and Office Supplies are the best in terms of profits. Plus they seem like a good investment because of their profit margins. Furniture are still making profits but do not convert well in overall.

Let's observe the highest total sales and total profits per Category in each region:

```
SELECT
  region,
  category,
  SUM(sales) AS total_sales,
  SUM(profit) AS total_profit
FROM
  superstore
GROUP BY
  region,
  category
ORDER BY
  total_profit DESC;
```

region	category	total_sales	total_profit
West	Office Supplies	213153	51145
East	Technology	264892	47437
West	Technology	251917	44261
East	Office Supplies	201813	40729
Central	Technology	170417	33687
South	Technology	148740	19976
South	Office Supplies	123991	19565
West	Furniture	248458	10580
Central	Office Supplies	164623	9035
South	Furniture	116281	6469
East	Furniture	205541	2506
Central	Furniture	162774	-2580

Highest total sales and profits per Category in each region

These our are best categories in terms of total profits in each region. The West is in our top 3 two times with Office Supplies and Technology and the East with Technology. Among the total profits, the only one that fails to break even is the Central Region with Furniture where we operate at a loss when selling it there.

Now let's see the highest total sales and total profits per Category in each state:

```
SELECT
  state,
  category,
  SUM(sales) AS total_sales,
  SUM(profit) AS total_profit
FROM
  superstore
GROUP BY
  state,
  category
ORDER BY
  total_profit DESC;
```

	state	category	total_sales	total_profit
▶	New York	Technology	127466	42167
	California	Office Supplies	137579	36735
	California	Technology	159191	29430
	New York	Office Supplies	89352	25750
	Washington	Technology	50536	15018
	Michigan	Office Supplies	37528	14908
	Indiana	Technology	26324	11001
	Washington	Office Supplies	38559	10932
	Georgia	Office Supplies	26516	9779
	California	Furniture	153841	8488
	Minnesota	Office Supplies	19407	7785
	Virginia	Technology	24117	7398

Top Highest total sales and profits per Category in each state

The table above shows the most performing categories in each of our states. Technology in New York and Washington and Office Supplies in California. The 3 categories are all around good for our top 3 markets except the furniture category in Washington which is good but not as great as the others.

Let's check the least profitable ones by just changing our 'ORDER BY' clause too ascending (ASC) :

```sql
SELECT
  state,
  category,
  SUM(sales) AS total_sales,
  SUM(profit) AS total_profit
FROM
  superstore
GROUP BY
  state,
  category
ORDER BY
  total_profit asc;
```

	state	category	total_sales	total_profit
▶	Texas	Office Supplies	43893	-18406
	Ohio	Technology	35675	-12649
	Texas	Furniture	60545	-10404
	Illinois	Furniture	27903	-8705
	Illinois	Office Supplies	19118	-814 -8705
	Pennsylvania	Furniture	38624	-7231
	Pennsylvania	Office Supplies	34149	-5006
	Ohio	Furniture	23138	-4366
	North Carolina	Technology	26084	-3583
	North Carolina	Furniture	15156	-3486
	Colorado	Technology	10969	-3470
	Pennsylvania	Technology	42149	-3196
	Tennessee	Office Supplies	12106	-3142
	Arizona	Furniture	12884	-2825
	Colorado	Furniture	12465	-2671

Top Lowest total sales and profits per Category in each state

Office supplies in Texas, Technology in Ohio and Furniture in Texas and Illinois are our biggest losses. Let’s move on to subcategories.

6. What subcategory generates the highest sales and profits in each region and state ?

Let’s observe the total sales and total profits of each subcategory with their profit margins:

```sql
SELECT
  subcategory,
  SUM(sales) AS total_sales,
  SUM(profit) AS total_profit,
  ROUND(
    SUM(profit)/ SUM(sales)* 100,
    2
  ) AS profit_marg
FROM
  superstore
GROUP BY
  subcategory
ORDER BY
  total_profit DESC;
```

subcategory	total_sales	total_profit	profit_marg
Copiers	149530	55618	37.20
Phones	329792	44424	13.47
Accessories	167401	41932	25.05
Paper	75347	32706	43.41
Binders	199922	29966	14.99
Chairs	328454	26586	8.09
Storage	216822	21530	9.93
Appliances	107538	18132	16.86
Furnishings	82753	11601	14.02
Art	27137	6530	24.06
Envelopes	15340	6453	42.07
Labels	12507	5558	44.44
Machines	189243	3387	1.79
Fasteners	3009	945	31.41
Supplies	45958	-1346	-2.93
Bookcases	114879	-3479	-3.03
Tables	206968	-17733	-8.57

Subcategories with their total sales, total profits and profit margins

Out of our 17 subcategories nationwide, our biggest profits comes from Copiers, Phones, Accessories and Paper. The profits and profit margins on Copiers and Papers especially are interesting for the long run. Our losses came from Tables, Bookcases and Supplies where we are uncapable of breaking even. Those 3 should be further reviewed as the sales are there, (except Supplies) but we cannot generate profits from them.

Now let's see the highest total sales and total profits per subcategory in each region:

```
SELECT
  region,
  subcategory,
  SUM(sales) AS total_sales,
  SUM(profit) AS total_profit
FROM
  superstore
GROUP BY
  region,
  subcategory
ORDER BY
  total_profit DESC
LIMIT 15;
```

region	subcategory	total_sales	total_profit
West	Copiers	49750	19327
East	Copiers	53220	17023
West	Accessories	61120	16484
West	Binders	54464	15635
Central	Copiers	37260	15609
Central	Phones	72395	12312
East	Phones	100526	12289
West	Paper	25234	11462
East	Binders	52637	11291
East	Accessories	45038	11196
South	Phones	58269	10755
East	Chairs	96263	9360
West	Phones	98602	9068
West	Storage	66576	8648
East	Paper	19241	8641

Top 15 Subcategories with the highest total sales and total profits in each region

These above display the best subcategories per region.

Now let's see the least performing ones :

```
SELECT
 region, subcategory,
 SUM(sales) AS total_sales,
 SUM(profit) AS total_profit
FROM superstore
GROUP BY region, subcategory
ORDER BY total_profit ASC
LIMIT 15;
```

	region	subcategory	total_sales	total_profit
▶	East	Tables	39142	-11025
	South	Tables	43919	-4624
	Central	Furnishings	14241	-3615
	Central	Tables	39152	-3561
	Central	Appliances	23582	-2642
	Central	Bookcases	24153	-1998
	West	Bookcases	36007	-1651
	Central	Machines	26800	-1485
	South	Machines	53890	-1439
	East	Supplies	10574	-1201
	East	Bookcases	43819	-1169
	Central	Binders	56516	-724
	Central	Supplies	9393	-668
	West	Machines	42445	-618
	South	Supplies	8086	-42

Top 15 Subcategories with the lowest total sales and total profits in each region

We are unable to break-even with 14 subcategories. Tables and Furnishings are our biggest losses in profits in the East, South and Central region.

Now let's see the highest total sales and total profits per subcategory in each state:

```
SELECT
 state, subcategory,
 SUM(sales) AS total_sales,
 SUM(profit) AS total_profit
FROM superstore
GROUP BY state, subcategory
```

```
ORDER BY total_profit DESC
LIMIT 15;
```

	state	subcategory	total_sales	total_profit
▶	New York	Machines	43185	17319
	New York	Phones	47480	13381
	California	Accessories	37255	11094
	Michigan	Binders	22806	11067
	New York	Binders	32262	11029
	California	Binders	27724	9738
	Washington	Copiers	20250	9442
	Indiana	Copiers	18500	8850
	California	Copiers	24560	7890
	California	Paper	15853	7551
	California	Storage	42639	7166
	New York	Chairs	46640	7109
	California	Appliances	24178	6993
	California	Phones	67884	6271
	Minnesota	Binders	12470	6040

Top 15 Subcategories with the lowest total sales and total profits in each region

Machines, Phones and Binders perform very well in New York. Followed by Accessories and Binders in California and Michigan respectively.

Let’s see the lowest sales and profits. Still in order for biggest lost in profits

```
SELECT
   state, subcategory,
   SUM(sales) AS total_sales,
   SUM(profit) AS total_profit
FROM superstore
GROUP BY state, subcategory
ORDER BY total_profit ASC
LIMIT 15;
```

	state	subcategory	total_sales	total_profit
▶	Texas	Binders	8855	-14409
	Ohio	Machines	8978	-11770
	Illinois	Binders	4471	-7100
	Texas	Appliances	2408	-6150
	North Carolina	Machines	12621	-5385
	New York	Tables	13781	-4535
	Pennsylvania	Binders	6090	-4445
	Colorado	Machines	3314	-4384
	Illinois	Tables	6549	-4311
	North Carolina	Tables	9683	-3684
	Pennsylvania	Phones	19635	-3614
	Tennessee	Binders	5043	-3563
	Texas	Furnishings	3728	-3286
	Pennsylvania	Bookcases	5229	-2896
	Ohio	Phones	14634	-2778

Top 15 Highest total sales and profits per Subcategory in each state

Binders are our biggest losses in Texas and Illnois. Machines are not profitable in Ohio at all. We should observe and rethink our strategies in those areas.

7. What are the names of the products that are the most and least profitable to us?

```
SELECT productname,
    SUM(sales) AS total_sales,
    SUM(profit) AS total_profit
FROM superstore
GROUP BY productname
ORDER BY total_profit DESC
limit 10;
```

	productname	total_sales	total_profit
▶	Canon imageCLASS 2200 Advanced Copier	61600	25200
	Fellowes PB500 Electric Punch Plastic Comb Bind...	27454	7751
	Hewlett Packard LaserJet 3310 Copier	18840	6984
	Canon PC1060 Personal Laser Copier	11620	4571
	HP Designjet T520 Inkjet Large Format Printer -...	18375	4095
	Ativa V4110MDD Micro-Cut Shredder	7700	3773
	3D Systems Cube Printer, 2nd Generation, Mag...	14300	3718
	Plantronics Savi W720 Multi-Device Wireless He...	9368	3697
	Ibico EPK-21 Electric Binding System	15876	3345
	Zebra ZM400 Thermal Label Printer	6966	3344

Top 10 most profitable products

These Copiers, Machines and Printers are definetly the main foundations of our profits. The Canon imageClass 2200 Advanced Copier, Fellowes PB500 Electric Punch Plastic Comb Binding Machine with Manual Bind and the Hewlett Packard LaserJet 3310 Copier are our top 3. We should keep up the stock with these. Let's verify our less profitable ones:

```
SELECT productname,
    SUM(sales) AS total_sales,
    SUM(profit) AS total_profit
FROM superstore
GROUP BY productname
ORDER BY total_profit ASC
limit 10;
```

	productname	total_sales	total_profit
▶	Cubify CubeX 3D Printer Double Head Print	11100	-8880
	Lexmark MX611dhe Monochrome Laser Printer	16830	-4590
	Cubify CubeX 3D Printer Triple Head Print	8000	-3840
	Chromcraft Bull-Nose Wood Oval Conference T...	9918	-2876
	Bush Advantage Collection Racetrack Conferen...	9546	-1933
	GBC DocuBind P400 Electric Binding System	17965	-1879
	Cisco TelePresence System EX90 Videoconferen...	22638	-1811
	Martin Yale Chadless Opener Electric Letter Ope...	16656	-1300
	Balt Solid Wood Round Tables	6519	-1202
	BoxOffice By Design Rectangular and Half-Moo...	1707	-1149

Top 10 less profitable products

The Cubify CubeX 3D Printer Double Head Print, Lexmark MX611dhe Monochrome Laser Printer and the Cubify CubeX 3D Printer Triple Head Print are the products that operate the most at a

loss. We should take this into account if we are thinking about modifying our stock.

8. What segment makes the most of our profits and sales ?

```
SELECT
  segment,
  SUM(sales) AS total_sales,
  SUM(profit) AS total_profit
FROM
  superstore
GROUP BY
  segment
ORDER BY
  total_profit DESC;
```

	segment	total_sales	total_profit
▶	Consumer	1150258	132663
	Corporate	696641	90355
	Home Office	425701	59792

Goods Segment ordered by total profits

The consumer segment brings in the most profit followed by Corporate and then Home office. Let's move on.

9. How many customers do we have (unique customer IDs) in total and how much per region and state?

```
SELECT COUNT(DISTINCT customerid) AS total_custo
FROM superstore;
```

	total_customers
▶	793

Total number of customers

We've had 793 customers between 2014 and 2017. Regionally, we had the following:

```
SELECT region, COUNT(DISTINCT customerid) AS tot
FROM superstore
GROUP BY region
ORDER BY total_customers DESC;
```

region	total_customers
West	681
East	670
Central	626
South	510

Total customers per region

We surely had customers moving around regions which explains why they all do not add up to 793. Since there could be double counting. The West is the area where we have the biggest market of all. State wise, here are the numbers:

```
SELECT state, COUNT(DISTINCT customerid) AS tota
FROM superstore
GROUP BY state
ORDER BY total_customers DESC;
```

	state	total_customers
▶	California	573
	New York	413
	Texas	369
	Pennsylvania	248
	Illinois	234
	Washington	218
	Ohio	198
	Florida	180
	North Carolina	121
	Virginia	106
	Michigan	104
	Arizona	99
	Georgia	83
	Tennessee	83
	Colorado	74

Top 15 states with the most customers

We have the most customers in California, New York and Texas. The areas where we have the least that passed by there are:

```
SELECT state, COUNT(DISTINCT customerid) AS tota
FROM superstore
GROUP BY state
ORDER BY total_customers ASC;
```

	state	total_customers
▶	Wyoming	1
	West Virginia	2
	North Dakota	2
	Maine	3
	District of Columbia	4
	Vermont	5
	South Dakota	5
	Montana	7
	Idaho	11
	Kansas	14
	Iowa	16
	New Hampshire	17
	South Carolina	19
	Louisiana	21
	New Mexico	22

Top 15 states with the least customers

Wyoming, North Dakota and West Virginia are the places where we had the least customers carry on business with us there.

Step 6: Act

With everything that was covered, here are our conclusions and future recommendations for the success of our Superstore:

1. Our profits got progressively better. Our sales too even with a short halt in 2015. We should keep the pace up on that aspect.

2. Our most profitable quarter all year round was Q4. To maximize even more profits, we must make sure to have enough stock and push our marketing and customer service to make the most out of the October—December festive period.

3. The most performing regions are the West then the East, South and Central regions in that order. The Central region brings in at least $100,000 more in sales than the South region but still makes less profits than it. There is work to be done in the Central region if we really want to keep that market. However, I believe it is better to take some of the resources in our Central region to instead our West region stores as we are more profitable there and could really establish ourselves as kingpin in that region.

4. California, New York and Washington are our most profitable markets and most present ones especially in terms of sales as states. We have to focus more on them. Our least profitable markets are Texas, Ohio, and Pennsylvania. Which I believe that we should decrease our presence there or even put a halt at our store locations there as sales in Texas and Pennsylvania are in the $100,000s but are unable to convert to profits.

5. New York City, Los Angeles and Seattle are our most profitable cities and we list them as being a top priority because it is easier to rule a city than ruling a state. If we gain the city, gaining the state will be less challenging. Philadelphia, Houston and San Antonio are the cities where we lose the most money. We have 2 cities from Texas in our top 3 cities so it is clear that we have start rethinking about really wanting to carry business there, the better option would be to stop.

6. Out of the 3 categories, Technology and Office Supplies are the best in terms of profits. Plus they seem like a good investment because of their profit margins. Furnitures are still making profits but do not convert well in overall. With low profits and low profit margins, we should start to see what more we can bring to the furniture department. The sales are there but they do not translate smoothly.

7. Still under categories but regionally, Office supplies in the West brings the most profit so we must increase the cap of those materials over there. Same thing with the East and office supplies and both the East and West with Technology. However, furniture in the Central region is the only category that doesn't convert to profits so it would be better to take some of these resources to the West region which is the biggest gainer in terms of Furniture.

8. State wise, Technology and Office supplies brings us the most profit in the state of New York and California. We have to increase the availability of these goods in these states for better profits. However, Office supplies in Texas, Technology in Ohio and Furniture in Texas and Illinois are our biggest losses so we have to drastically reduce these type of products in those areas.

9. Out of our 17 subcategories nationwide, our biggest profits comes from Copiers, Phones, Accessories and Paper. The profits and profit margins on Copiers and Papers especially are interesting for the long run. We should immediately push these products as we have a great market share with these items. Our losses came from Tables, Bookcases and Supplies where we are uncapable of breaking even.

We must spend less time and money with them. Especially with tables because compared to our only 3 losses, Tables lost us $17725 which is huge compared to our other losses of $3472 and $1188 which came from Bookcases and Supplies respectively.

10. For subcategories regionally, Copiers in the West and East with Accessories and Binders in the West are products that we always have to have in stock and promote for more profit. While Tables in the East, South and Central with furnishings in the Central region are the top products where we lose money so we should direct our attention elsewhere.

11. In what concerns subcategories by state, Machines, Phones and Binders perform very well in New York. Followed by Accessories and Binders in California and Michigan respectively so there is a need to accentuate our business there with those products. For our biggest losses, Binders in Texas and Illinois with machines in Ohio are not profitable at all. We have to decrease stock in those places.

12. For the particular products, The Canon imageClass 2200 Advanced Copier, Fellowes PB500 Electric Punch Plastic Comb Binding Machine with Manual Bind and the Hewlett Packard LaserJet 3310 Copier are our top 3 in profits. We must always keep up the stock with these. For our losses, The Cubify CubeX 3D Printer Double Head Print, Lexmark MX611dhe Monochrome Laser Printer and the Cubify CubeX 3D Printer Triple Head Print are the products that operate the most at a loss. We should certainly discontinue those products.

13. Out of the 3 segments, The consumer segment brings in the most profit followed by Corporate and then Home office. We must give more importance to the consumer segment even if all the 3 are profitable.

14. Finally, for our clientele, we have 793 customers total, and we have the most customers in California, New York and Texas. The case of Texas is pretty ironic since it is also the state that losses us the most money. So we must take a critical decision about Texas first as we absolutely can’t break through now. California and New York are pretty obvious, we have to be outstanding and be the best of what there is to offer in our respective niche.