Superstore

Presentation to the Regional Sales Director of the Central US

By Jose G. Lora

Meeting Agenda

- Background information on the project
- Problem statement
  - The Hypotheses created
- Data used
- How it was manipulated
- Insights gleamed
- Recommendations

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Background information on the project

- I was asked to use the Data Analytics Workflow to analyze the Superstore orders and returns dataset for the central US and to make data-driven recommendations

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Framing

- The Regional Sales Director wants to understand what the reasons are for so many returns that we are experiencing in the central United States market in 2019. Conduct an analysis to make data-driven recommendations based on orders, product categories, and returns.

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Framing (cont.)

1. If we examine all the product categories, we might identify that some categories are more prone to returns.
2. If we examine smaller or large purchases, we might identify that one area may be more prone to returns.
3. If we examine the salespersons, we might identify that specific salespersons have a higher return rate
4. If we examine the correlation between days to ship and returns we may find that items that take longer to ship have a higher return rate

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Wrangle and Prepare

Data Handling Summary

Explain how you cleaned your data (e.g. handled nulls, removed duplicates, reformatted columns, dropped current columns, added new columns). Include anything your instructor would need to know to replicate your analysis.

Added a column next to city_state
Separated city_state into individual columns using Text to Columns
Used TRIM to remove space in front state
Copy the new state value and paste the value, while deleting the other state values
Checked for duplicates using Remove Duplicates but did not find any
Did not remove any columns

Clean_data_orders tab

Concatenated order_info_id and order_id_number into a new column called order_id
Added a column for order month next to order date
Added a column for order day next to order month
Added a column for profit margin after profit with profit/ sales
Added a column and concatenated order_info_id and order_id_number into order_id
Added a column to profit_margin categorize sales as different levels based on purchased amount
Added a days_to_ship column next to ship_mode - Subtracting ship_date from order_date

Clean_data_retunrs tab

Added customer name next to reason_return using Index/ Match to clean_data_returns
Added state next to customer_name using Index/ Match to clean_data_returns
Added category next to state using Index/ Match to clean_data_returns
Added sales next to category using Index/Match to clean_data_returns
Added sales_rank_type field next to sales and ranked the sales using multiple IF functions
Added profits using Index/ Match to clean_data_returns
Calculated profit margin by divididing profit by sales to clean_data_returns
Added order_date uning Index/Match
Added ship_date using Index/ Match
Calculated Days to ship date
Added sales person using Index/ Match to clean_data_returns
Added segement using Index/ Match to clean data returns

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Analyze

Sales vs. Returns

Row Labels	Sum of sales	Average of	Count of sales2
Furniture	**$ 1,873,591.03**	**$ 405.10**	**4625**
Consumer	$ 961,476.01	$ 413.18	2327
Corporate	$ 532,184.57	$ 393.34	1353
Home Office	$ 379,930.45	$ 402.04	945
Office Supplies	**$ 1,831,438.90**	**$ 124.11**	**14756**
Consumer	$ 897,379.05	$ 120.02	7477
Corporate	$ 581,285.43	$ 133.44	4356
Home Office	$ 352,774.42	$ 120.69	2923
Technology	**$ 2,264,181.92**	**$ 484.01**	**4678**
Consumer	$ 1,102,444.99	$ 458.78	2403
Corporate	$ 688,689.98	$ 509.39	1352
Home Office	$ 473,046.95	$ 512.51	923
Grand Total	**$ 5,969,211.85**	**$ 248.11**	**24059**

Row Labels	Sum of sales	Average of sales	Count of sales3
Furniture	**$ 205,326.18**	**$ 786.69**	**261**
Consumer	$ 105,656.53	$ 825.44	128
Corporate	$ 74,488.66	$ 800.95	93
Home Office	$ 25,180.99	$ 629.52	40
Office Supplie	**$ 146,486.03**	**$ 202.61**	**723**
Consumer	$ 90,551.87	$ 231.00	392
Corporate	$ 37,593.55	$ 198.91	189
Home Office	$ 18,340.61	$ 129.16	142
Technology	**$ 201,813.36**	**$ 896.95**	**225**
Consumer	$ 96,085.10	$ 897.99	107
Corporate	$ 59,104.95	$ 820.90	72
Home Office	$ 46,623.31	$ 1,013.55	46
Grand Total	**$ 553,625.57**	**$ 457.92**	**1209**

Row Labels	Sum of sal	Count of sales
Furniture	**31.39%**	**19.22%**
Office Supplies	**30.68%**	**61.33%**
Technology	**37.93%**	**19.44%**
Grand Total	**100.00%**	**100.00%**

Row Labels	Sum of sales	Count of sales
Furniture	**37.09%**	**21.59%**
Office Supplie	**26.46%**	**59.80%**
Technology	**36.45%**	**18.61%**
Grand Total	**100.00%**	**100.00%**

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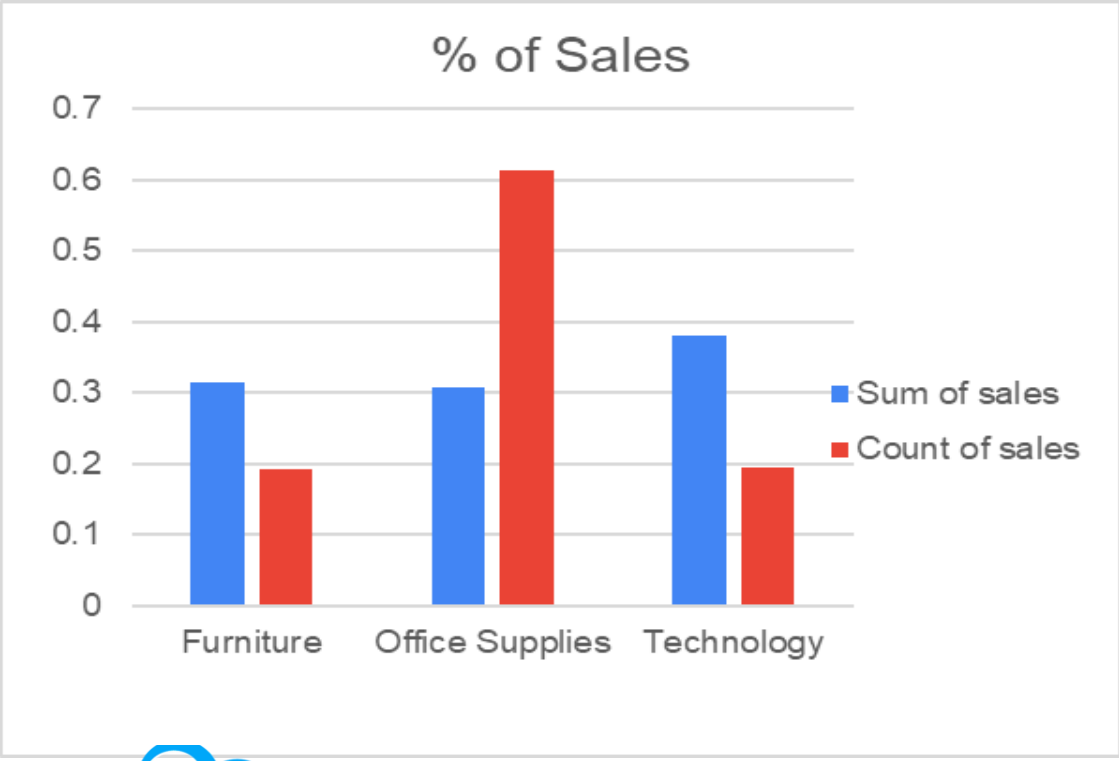
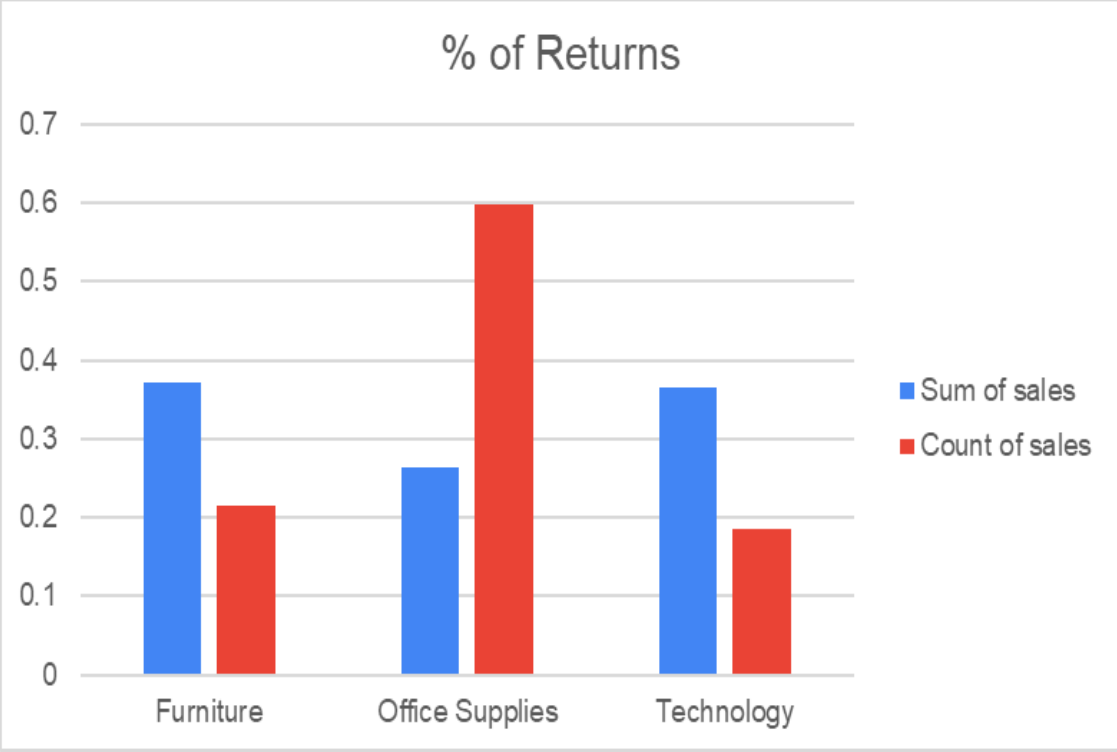
Interpret & Communicate





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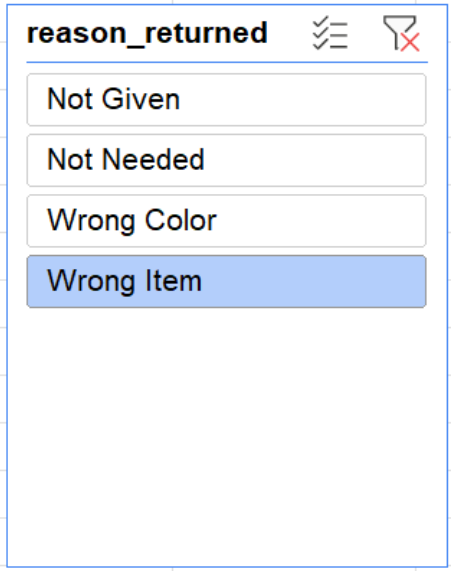
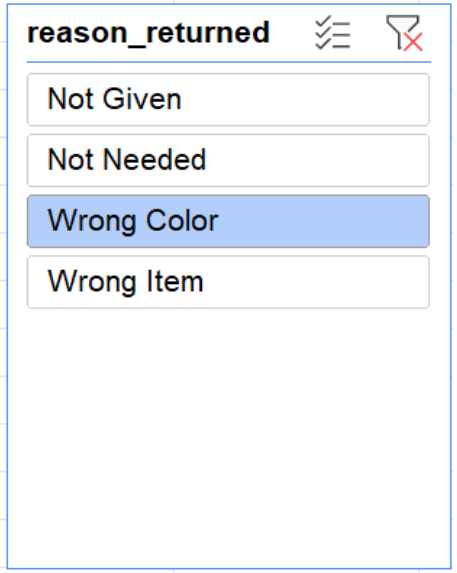
Analyze

Returns

Row Labels	Sum of sales	% of sales
Furniture	**$ 111,068.57**	**46.96%**
Consumer	$ 52,783.94	22.32%
Corporate	$ 47,424.79	20.05%
Home Office	$ 10,859.84	4.59%
Office Supplies	**$ 34,788.56**	**14.71%**
Consumer	$ 20,609.04	8.71%
Corporate	$ 8,521.23	3.60%
Home Office	$ 5,658.29	2.39%
Technology	**$ 90,653.88**	**38.33%**
Consumer	$ 40,915.01	17.30%
Corporate	$ 19,866.22	8.40%
Home Office	$ 29,872.65	12.63%
Grand Total	**$ 236,511.01**	**100.00%**



Row Labels	Sum of sales	% of sales
Furniture	**$ 17,482.25**	**27.75%**
Consumer	$ 7,339.56	11.65%
Corporate	$ 7,256.13	11.52%
Home Office	$ 2,886.56	4.58%
Office Supplies	**$ 23,381.40**	**37.11%**
Consumer	$ 14,681.22	23.30%
Corporate	$ 6,443.07	10.23%
Home Office	$ 2,257.11	3.58%
Technology	**$ 22,142.40**	**35.14%**
Consumer	$ 9,381.07	14.89%
Corporate	$ 10,399.49	16.51%
Home Office	$ 2,361.84	3.75%
Grand Total	**$ 63,006.05**	**100.00%**



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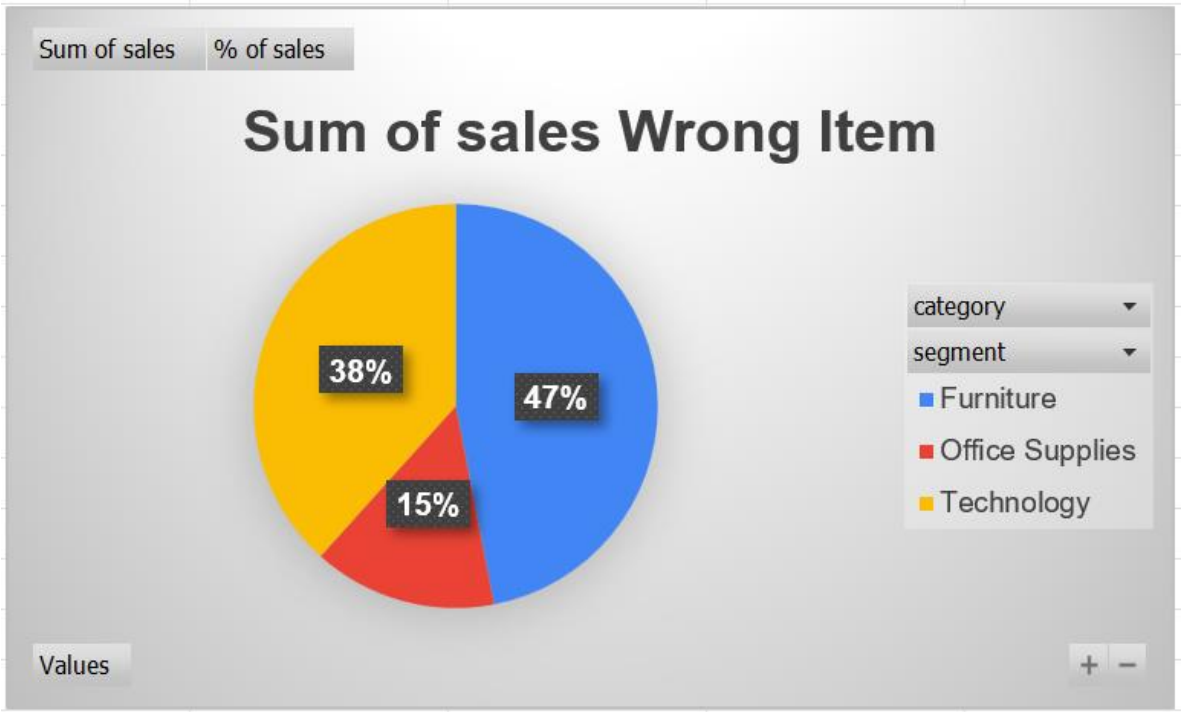

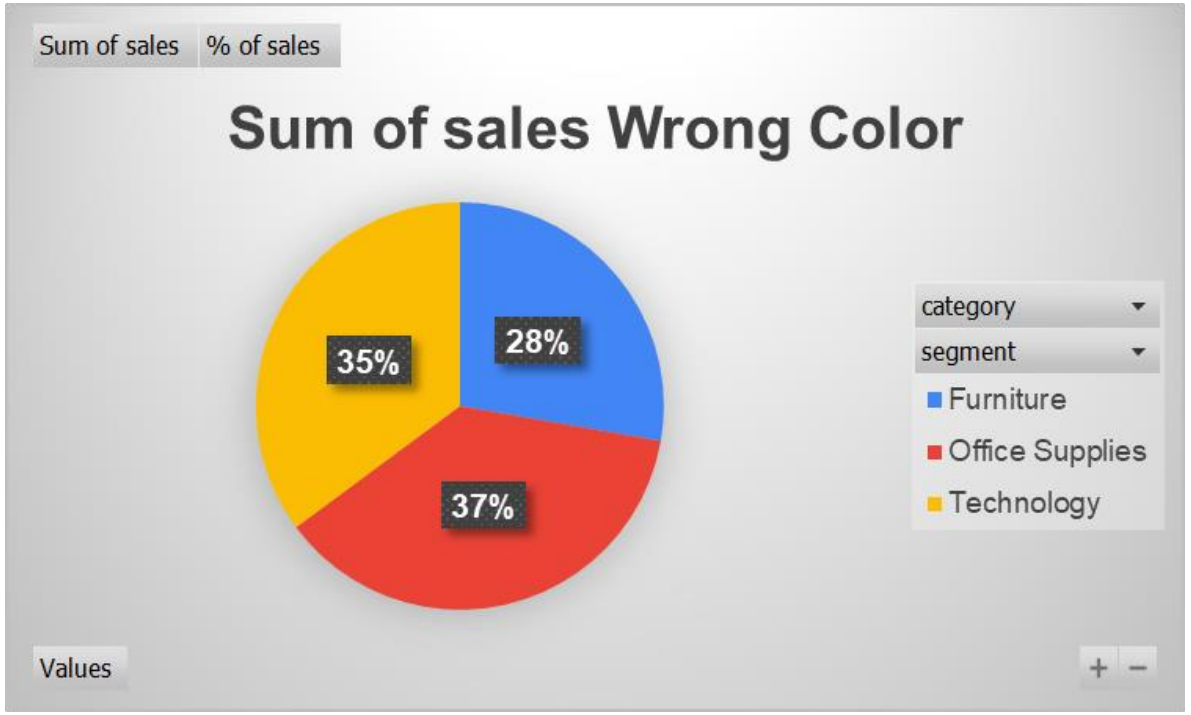

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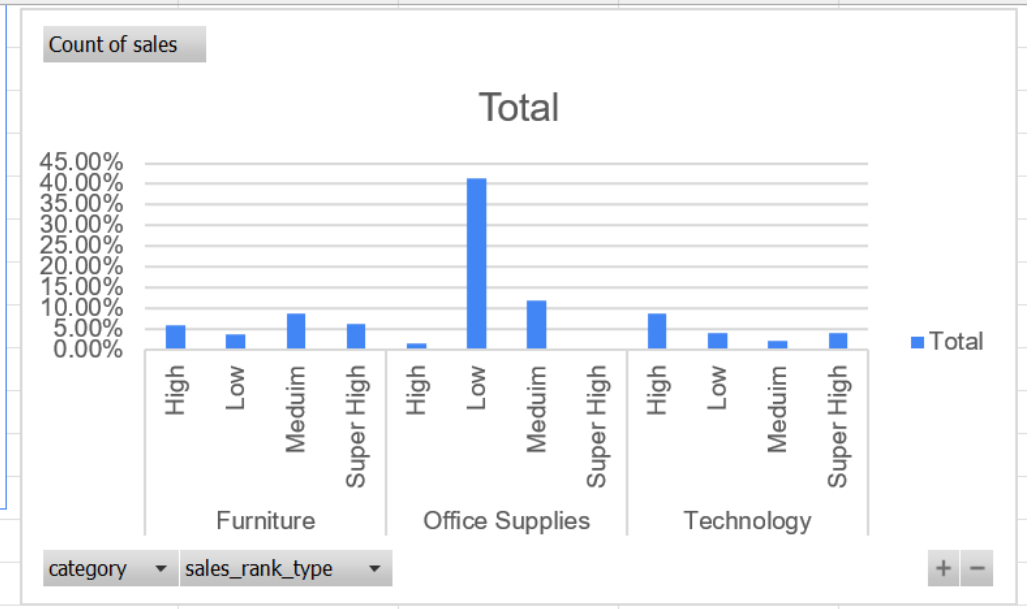
Analyze & Communicate

Returns

Row Labels	Count of sales
Furniture	**24.94%**
High	5.94%
Low	3.80%
Meduim	8.79%
Super High	6.41%
Office Supplies	**55.34%**
High	1.66%
Low	41.33%
Meduim	11.88%
Super High	0.48%
Technology	**19.71%**
High	8.79%
Low	4.28%
Meduim	2.38%
Super High	4.28%
Grand Total	**100.00%**



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Framing
(recap)

1. If we examine all the product categories, we might identify that some categories are more prone to returns.
    - **5.7% growth in furniture returns over regular sales**
2. If we examine smaller or large purchases, we might identify that one area may be more prone to returns.
    - **Over 52% of returns are in the are in Office Supplies priced low or medium**
3. If we examine the salespersons, we might identify that specific salespersons have a higher return rate
    - **Turns out there is only one sales agent in the region. I thought the data set was for the company.**
4. If we examine the correlation between days to ship and returns, we may find that items that take longer to ship have a higher return rate
    - **Seems like there is no major observations. Returns seems to be indiscriminatory to when they were shipped.**

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Recommendations

- Redo the return survey to collect data to understand what customers mean when they say “Wrong item.” Is it wrong because of us or them?
- Work on the color descriptions for all products to be more specific leading to more clarity
- Evaluate return policy and compare to competitors. Is it too lenient?

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If I had more time…

- Would have dug into the profit margin and discount items
- Add more slides and be able to have the time to share those extra slides
- Why do returns have higher average sale cost?
- Compare how the returns in this region compare to others
- What is driving the high returns of high-priced technological items

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