Lab 5 Report

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The first major part of the project consisted of downloading and manipulating data to prepare an analysis. By obtaining data for the roads and block groups in our study area, combined with the addresses and sales info of our store and customers, we geocoded all of this information to be displayed and analyzed spatially.
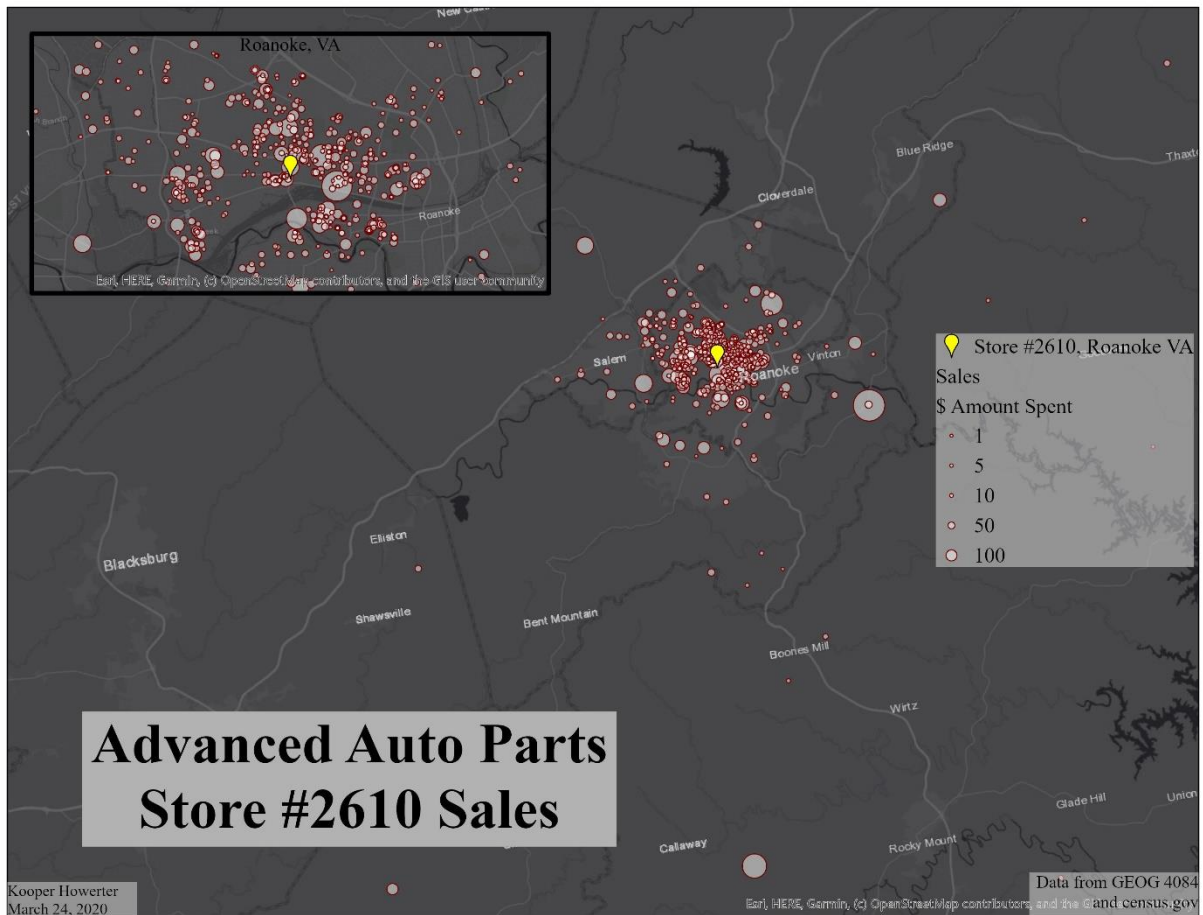
The second part consisted of using the data we had prepared and analyzing the sales and customers themselves. We mapped the customers residences as well as size of each of the sales to show where most of the store's profits/and customer base is coming from. As we see on the map, the sales are heavily centered around our store, with a steep drop off outside of Roanoke. From the map we can also see that a very large portion of the sales are pretty small, with lots of sales under $50.

By creating rings of increasing distance from the store and summarizing the sales within each, we calculated and showed both sales and customer numbers over distance. As we can see from the tables and line graphs below, both profits and customers drastically drop at around 2-3 miles from the store. The vast majority of the customers and sales are within 2 miles of the store. We saw this exact trend previously when looking at how clustered the sales are around the store on the map.

For our last analysis, we matched the sales points to the block groups of the area and calculated the percentage of total sales in each group to get a more specific look at where the stores major market is. Areas with above 3% of the stores total sales were considered the main service area, while 1-2% was the submarket, and less than 1% was the fringe market or no sales for 0%. In the map of these block groups, we see that every main service area was immediately surrounding the store, while lesser markets surround those. An interesting note from the map is that there are a few submarket regions that are a moderate distance from the store. These are likely highly residential areas where a lot of customers and potential future customers live and should be a focus for increasing future sales.

All of the data in our project suggests the same trend in regard to the stores sales: there is a huge drop-off in customer base and sales numbers just a few miles from the store. We know that with increased distance, we are much less likely to have customers from those areas. Placement of all stores is vital, but especially in the case of an auto parts shop.
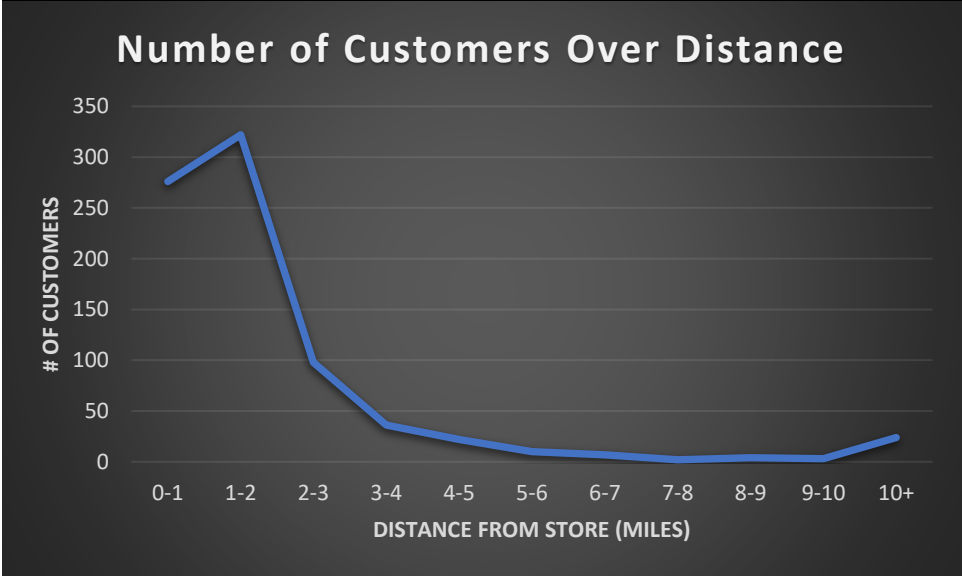
Positive Sales Proportional Map

Store #2610, Roanoke VA
Sales
$ Amount Spent
1
5
10
50
100

**Advanced Auto Parts
Store #2610 Sales**

Kooper Howerter
March 24, 2020

Positive Sales by Distance from the Store

Distance from Store (Miles)	Positive Sales $
0-1	7869.88
1-2	9291.8
2-3	2438.25
3-4	1526.36
4-5	396.97
5-6	318.61
6-7	648.28
7-8	12.37
8-9	87.01
9-10	201.39
10+	823.45
Total	**23614.37**

POSITIVE SALES OVER DISTANCE
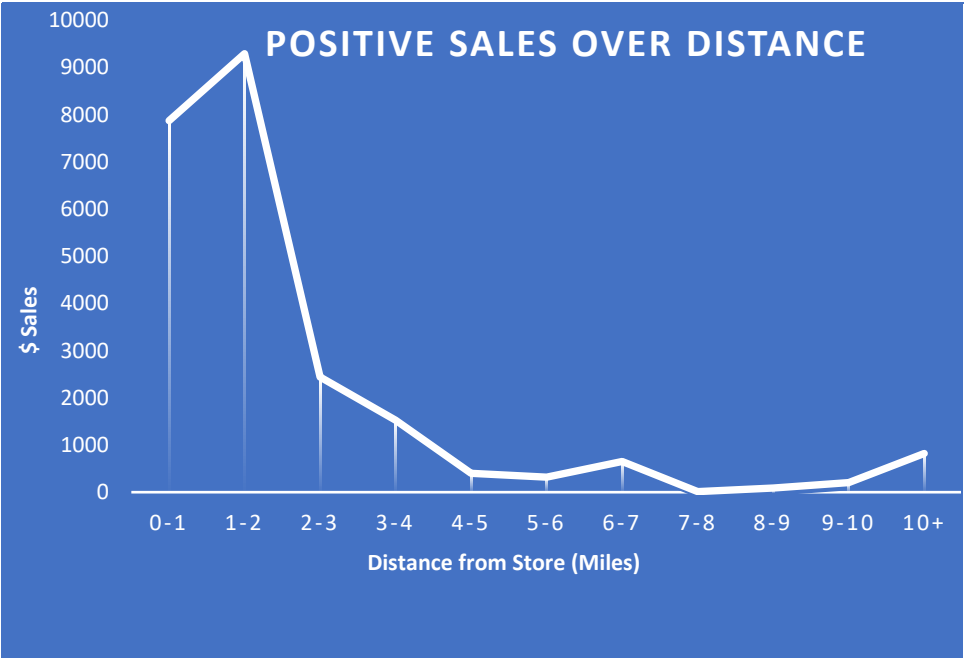
Number of Customers by Distance Class

Distance from Store(Miles)	Number of Customers
0-1	276
1-2	322
2-3	98
3-4	36
4-5	22
5-6	10
6-7	7
7-8	2
8-9	4
9-10	3
10+	24
Total	804

Number of Customers Over Distance

Matched Sales by Block Group

Sales Market

Advanced Auto Parts
Sales Market, Store #2610

Store #2610
Market Type
No Sales
Fringe Market
Sub Market
Main Service Area

Roanoke, VA

Kooper Howerter
March 24, 2020

Data from GEOG 4084
and census.gov