OPIM 5604 B15 – Predictive Modeling Assignment **Meghana Kasula (Net ID=mek15120)**

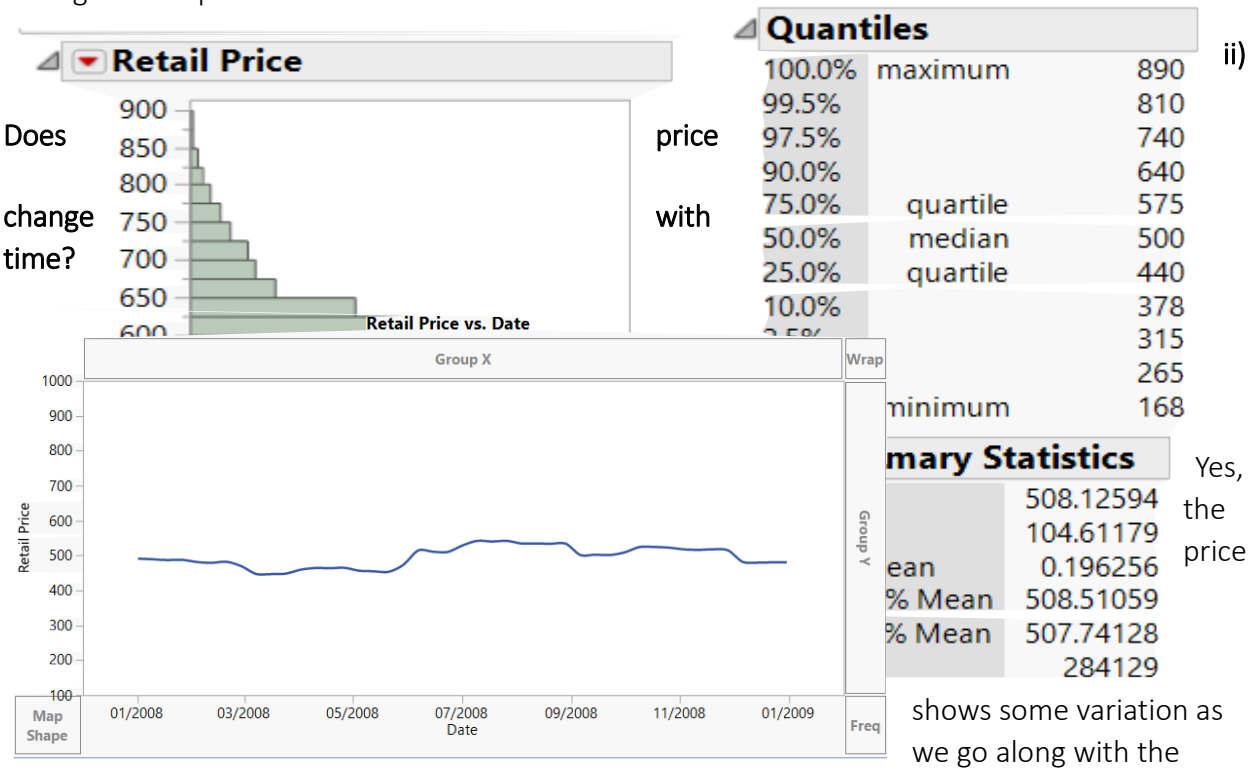
"The work contained and presented here is my work and my work alone."

a. Price Questions:

i) At what price are the laptops actually selling?

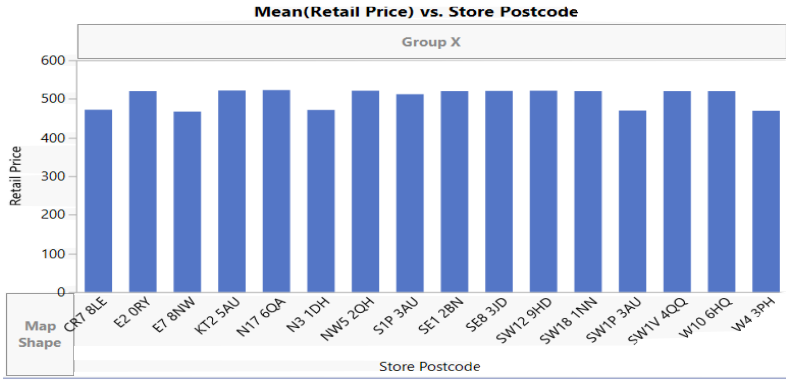
Here, the Mean is 508.125, so we can infer that approximately, the laptops were sold at an average of this price.

ii) Does price change with time?



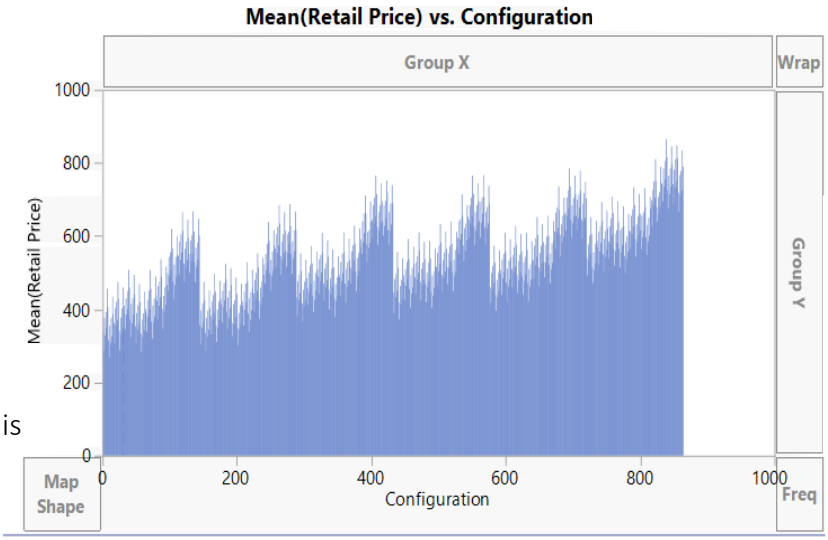
Yes, the price shows some variation as we go along with the time, interval of 2 months. We can always click on date and change the interval to weeks and days to see how it changed.

iii. Are prices consistent over retail outlets?



Mean of Retail Price Vs store postcode shows us the above graph. Which is actually looking quite regular with minimal variations or without any drastic changes. We can therefore interpret that prices are nearly consistant.

iv. How does price change with configuration?



The above graph shows us the mean (Retail price) VS configuration value. There is a periodic increase and decrease.
Hence we can say that price is increasing but following with a decrease.
But no inconsistent fluctuation noticed.

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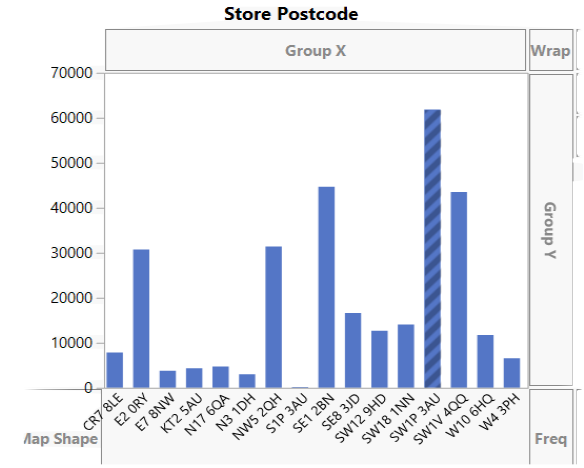
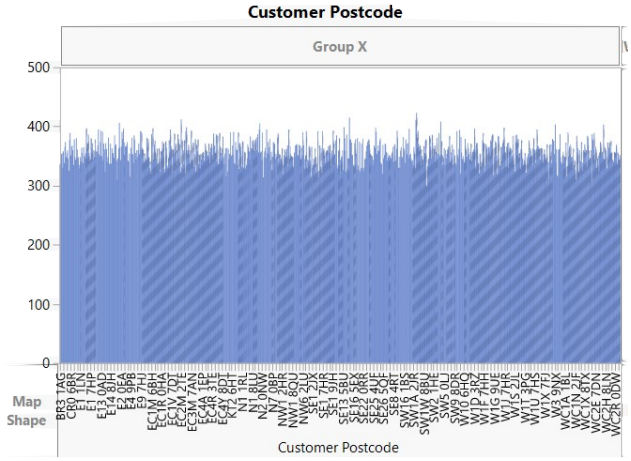
b. Location Questions:

i. Where are the stores and customers located?

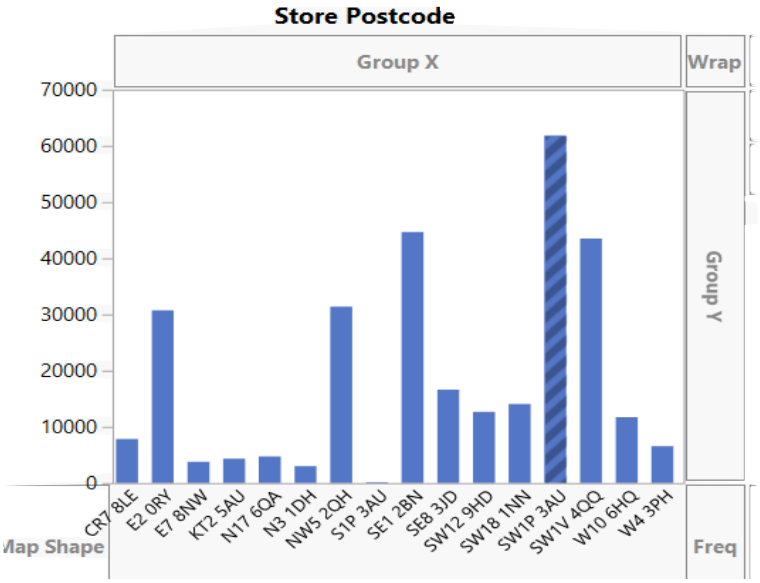




As we can see above, both the graphs from graph builder are plotted based on the customer and store

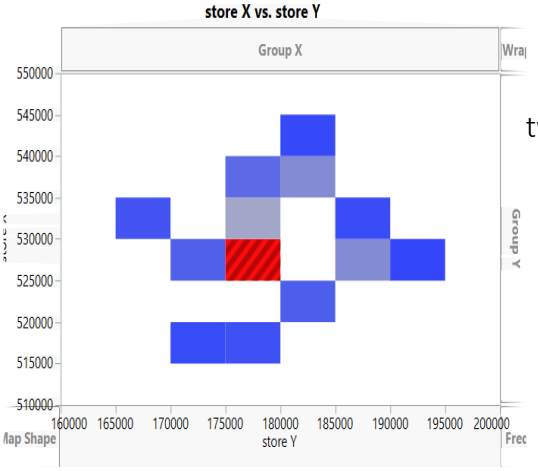
postcodes. As we click on one store postcode, all the customer post code light up who visited that particular store. We can't clearly say where exactly geographically present, but with this, we can definitely identify the target customers for a particular store.

ii. Which stores are selling the most?

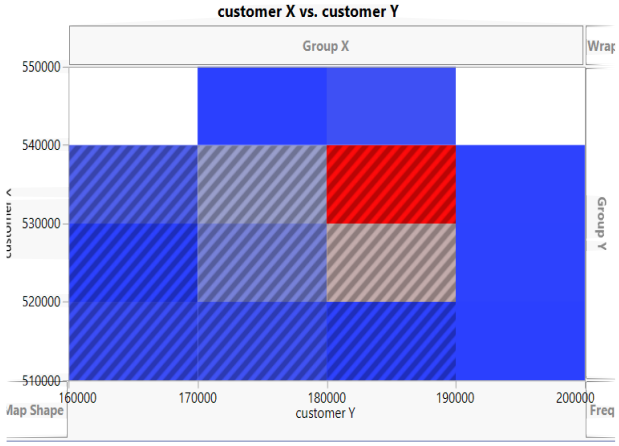


Clearly, from the graph beside plotted against the mean of the retail prices, SW1P3AU.

iii. How far would customers travel to buy a laptop?



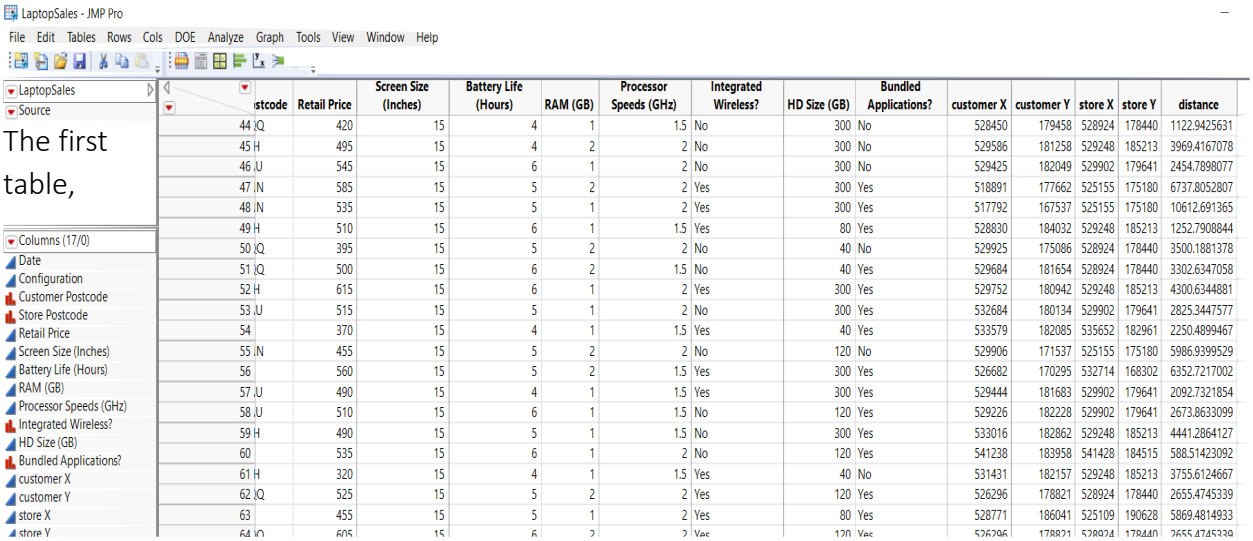
The two



graphs above show the heat map of concentration of stores and heat map of concentration of customers. I have kept the minimum and the maximum, and the origin of the x and y coordinates same so that we can easily compare.

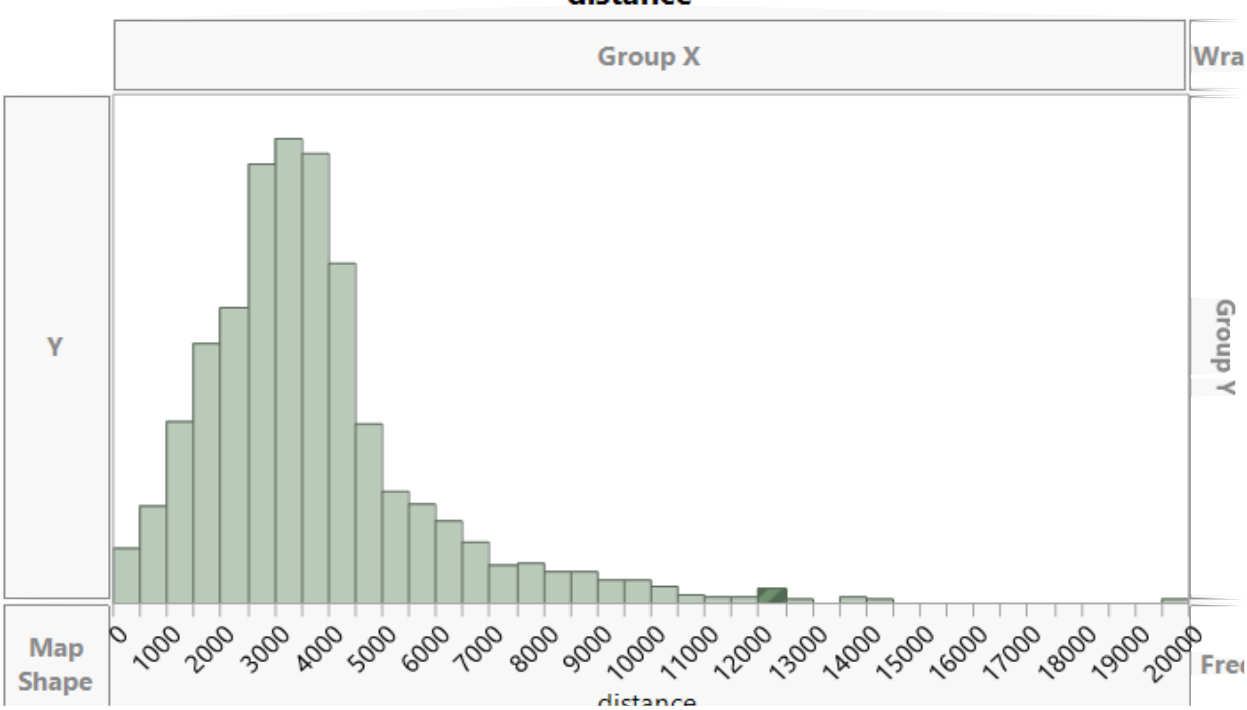
As I clicked on the most concentrated part of the stores, the customers related light up in the customer graph. This shows us the proximity of customers and stores and how they are related.

c. Try an alternative way of looking at how far customers traveled.



	stcode	Retail Price	Screen Size (Inches)	Battery Life (Hours)	RAM (GB)	Processor Speeds (GHz)	Integrated Wireless?	HD Size (GB)	Bundled Applications?	customer X	customer Y	store X	store Y	distance
44	JQ	420	15	4	1	1.5	No	300	No	528450	179458	528924	178440	1122.9425631
45	H	495	15	4	2	2	No	300	No	529586	181258	529248	185213	3969.4167078
46	JU	545	15	6	1	2	No	300	No	529425	182049	529902	179641	2454.7898077
47	JN	585	15	5	2	2	Yes	300	Yes	518891	177662	525155	175180	6737.8052807
48	JN	535	15	5	1	2	Yes	300	Yes	517792	167537	525155	175180	10612.691365
49	H	510	15	6	1	1.5	Yes	80	Yes	528830	184032	529248	185213	1252.7908844
50	JQ	395	15	5	2	2	No	40	No	529925	175086	528924	178440	3500.1881378
51	JQ	500	15	6	2	1.5	No	40	Yes	529684	181654	528924	178440	3302.6347058
52	H	615	15	6	1	2	Yes	300	Yes	529752	180942	529248	185213	4300.6344881
53	JU	515	15	5	1	2	No	300	Yes	532684	180134	529902	179641	2825.3447577
54		370	15	4	1	1.5	Yes	40	Yes	533579	182085	535652	182961	2250.4899467
55	JN	455	15	5	2	2	No	120	No	529906	171537	525155	175180	5986.9399529
56		560	15	5	2	1.5	Yes	300	Yes	526682	170295	532714	168302	6352.7217002
57	JU	490	15	4	1	1.5	Yes	300	Yes	529444	181683	529902	179641	2092.7321854
58	JU	510	15	6	1	1.5	No	120	Yes	529226	182228	529902	179641	2673.8633099
59	H	490	15	5	1	1.5	No	300	Yes	533016	182862	529248	185213	4441.2864127
60		535	15	6	1	2	No	120	Yes	541238	183958	541428	184515	588.51423092
61	H	320	15	4	1	1.5	Yes	40	No	531431	182157	529248	185213	3755.6124667
62	JQ	525	15	5	2	2	Yes	120	Yes	526296	178821	528924	178440	2655.4745339
63		455	15	5	1	2	Yes	80	Yes	528771	186041	525109	190628	5869.4814933
64	JQ	605	15	6	2	2	Yes	120	Yes	526296	178821	528924	178440	2655.4745339

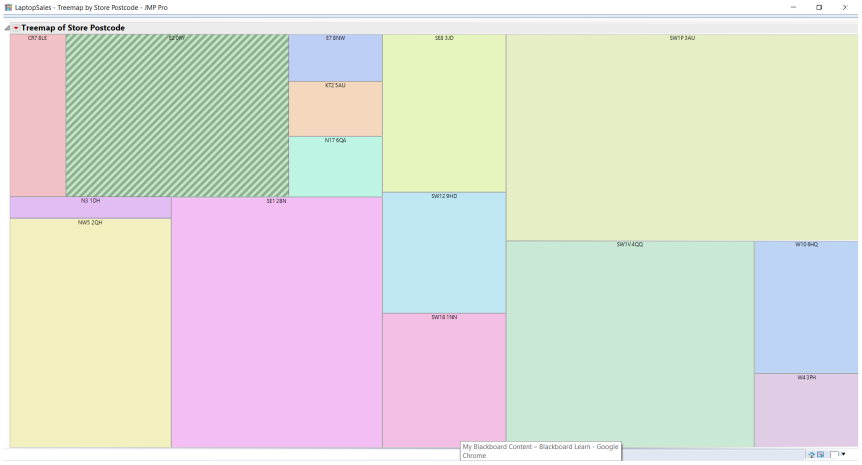
The first table, shows the column creation to calculate the distance, which I did using the formula . Hence I distance travelled column.



Next, I analyzed the distance to get an idea about most covered distance.

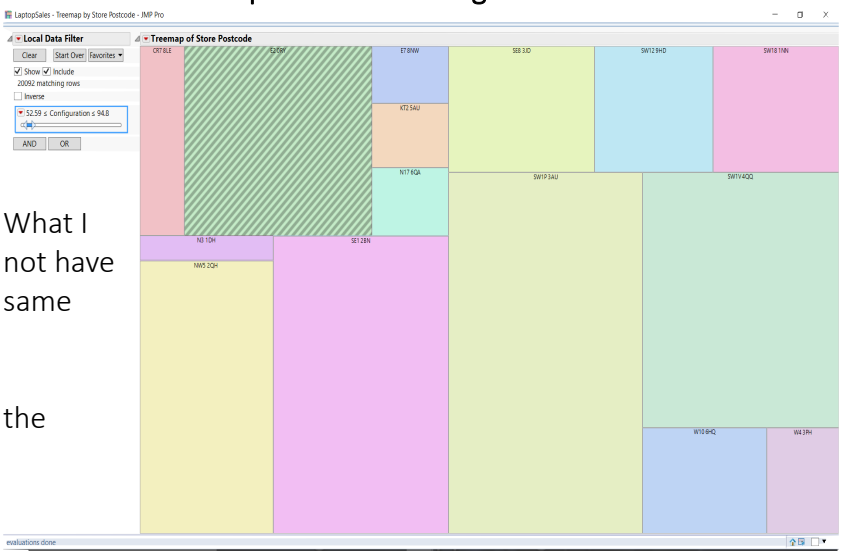
Revenue Questions:

i. How do the sales volume in each store relate to Acell's revenues?



This is a tree map to show the number of laptops sold and the store postcode and the total sales revenue percentage too.
If we hover over it, we would get all these details.

ii. How does this depend on the configuration?

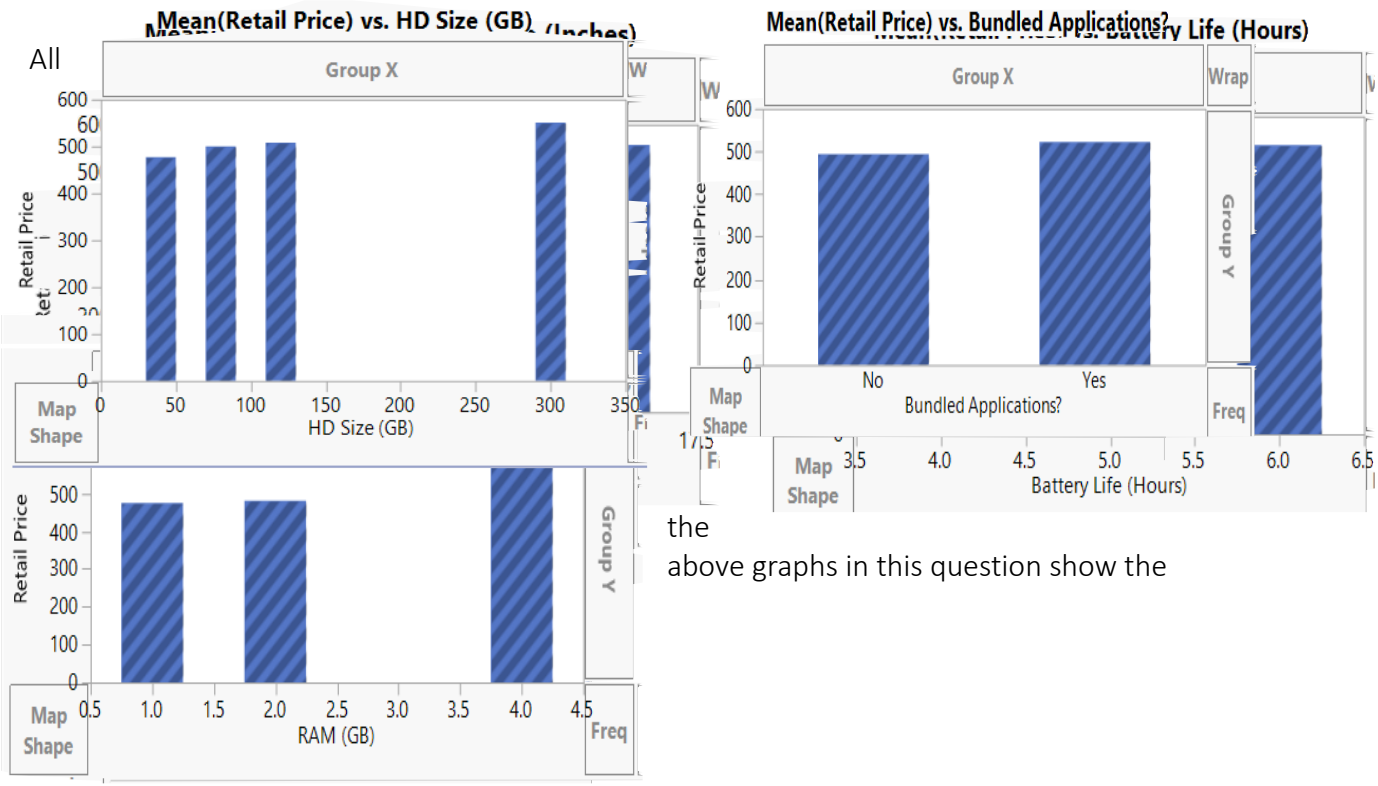


What I observed is that few stores do not have all configurations and at the same time, there is not much difference in the price but the difference in the volume of laptops sold.

I added a filter of configuration to see the variation of all of these with configuration.

Configuration Questions:

i. What are the details of each configuration? How does this relate to price?



All the above graphs in this question show the

variation of retail price mean with different specifications of laptop, or in simple terms different configurations.

ii. Do all stores sell all configurations?

	Store Postcode	N Rows	N(1)	N(2)	N(3)	N(4)	N(5)	N(6)	N(7)	N(8)	N(9)	N(10)	N(11)	N(1
1	CR7 8LE	7837	5	5	7	8	8	7	29	3	6	5	8	
2	E2 0RY	30707	23	25	35	33	27	19	69	21	24	19	28	
3	E7 8NW	3796	4	3	4	2	1	4	6	8	2	2	7	
4	KT2 5AU	4337	3	5	4	3	2	4	8	4	4	4	0	
5	N17 6QA	4743	1	7	4	2	3	2	8	1	4	0	3	
6	N3 1DH	3011	3	4	4	1	2	3	10	1	1	2	7	
7	NW5 2QH	31405	28	29	33	26	26	21	82	32	29	38	29	
8	S1P 3AU	148	0	0	0	0	0	0	1	0	0	0	0	
9	SE1 2BN	44656	47	26	43	45	45	30	112	31	36	44	33	
10	SE8 3JD	16595	16	15	18	18	15	10	40	14	19	17	13	
11	SW12 9HD	12684	10	14	6	8	12	13	34	6	10	16	15	
12	SW18 1NN	14076	12	4	13	12	13	15	33	8	10	19	9	
13	SW1P 3AU	61831	59	47	46	52	45	49	157	41	64	49	56	
14	SW1V 4QQ	43472	40	48	44	40	38	37	99	41	41	35	29	
15	W10 6HQ	11733	12	13	11	10	3	11	40	13	10	9	15	
16	W4 3PH	6541	3	9	2	7	8	9	16	3	3	10	5	

As we can clearly see, not all stores have the all the configuration. It can be seen in S1P3AU.