

**Business Case
for
Data Exploratory Analysis
Model Solution**

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PRICING

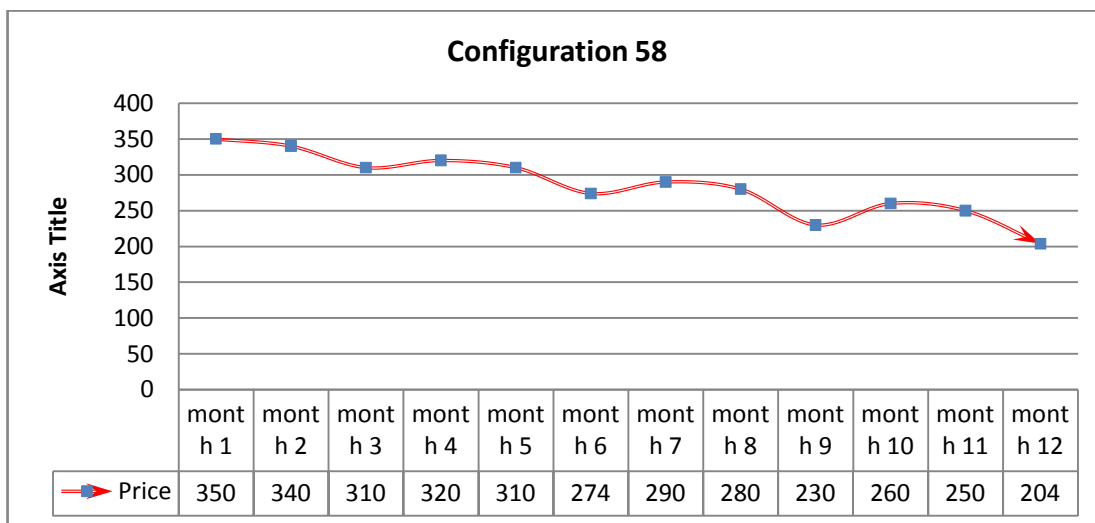
- Does laptop price change with time?

- ✓ Out of the 864 configuration complete sales record was available for 192 (22%) configurations while 113 (13%) of the data had only sales record of 8 months (January, June, July, August, September, October, November, December) whereas sales data for the majority of the configuration i.e. 559 configurations (65%) was available for only last 7 months indicating perhaps these configurations were launched in middle of the year.
- ✓ Analysis of the price change is being done on configurations with 12 month, 8month and last 7 month sale records separately as they follow different patterns on some occasions.

Configurations with 12 month sales data

- A similar pattern is seen in all the configurations as there is a price fall of an average 7 dollar or of average 1.55% from first to second month.
- There is a drop in prices among all the configurations.
- On an overall level the average price drop is of almost 25%.
- Price fall is there on an overall level but there is a pattern of price rise among all the configurations in the month of April, July and October by an average 7%.

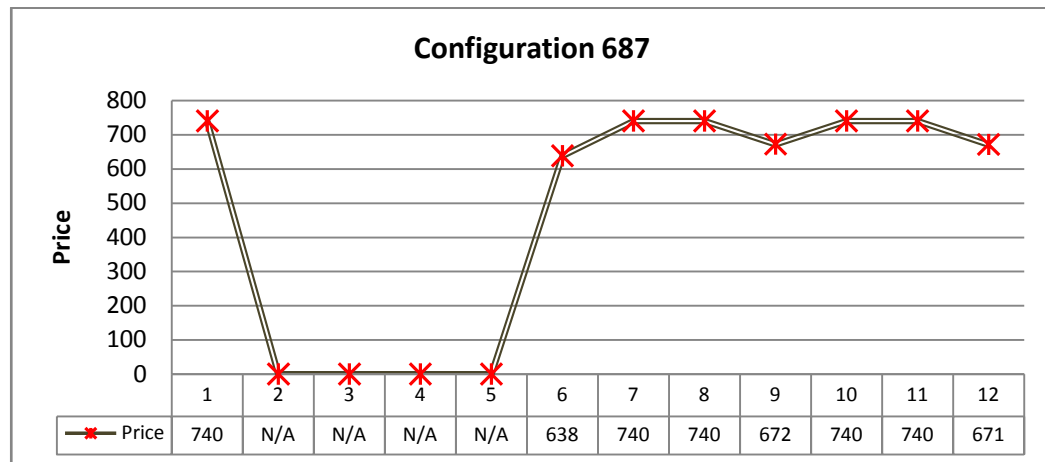
For example in Configuration 58 there is a massive fall in the average price becoming stable only in the 4th, 7th and 10th month but eventually seeing a fall in price by a massive 42% on an overall level.



Configurations with 8 month sales data

- Out of 113 configurations majority of them (around 92%) saw an overall fall in average price of around 10% with some configuration's price falling up to as high as 18% by the end of the year while the remaining 9 configurations saw a growth of 29%.
- However inferences drawn from such a irregular data are not very reliable as for example in the case of configuration 687 where there was a fall in prices on an overall level but if we look closely the prices were more or less stable and if take such cases into consideration then almost 31% configurations saw more or less stable prices.

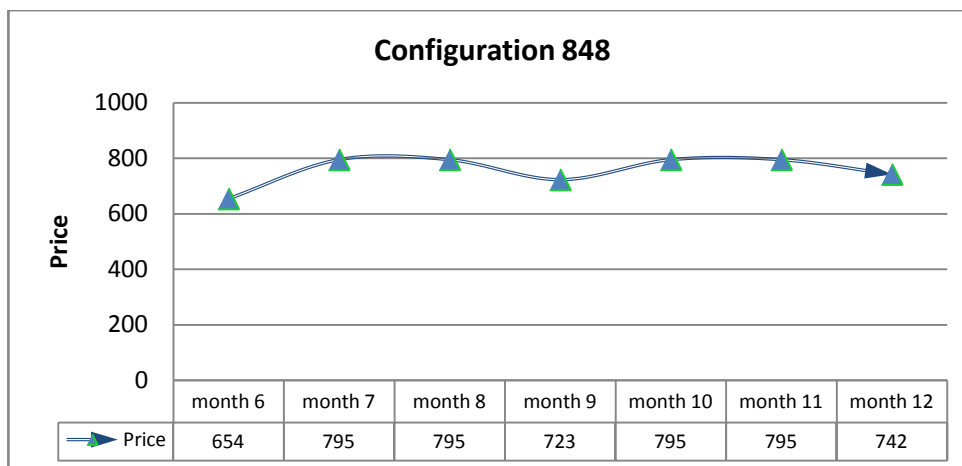
In the case of Configuration 687, on an overall level though there is a fall in price of 9% but if we look closely then prices are relatively stable from 6th month to the end of the year.



Configurations with last 7 month sales data

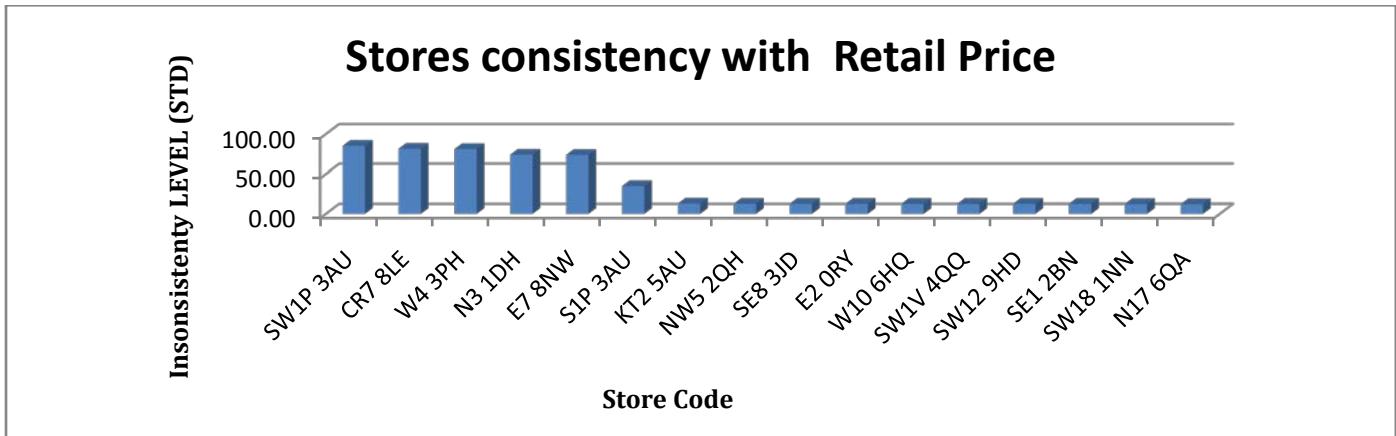
- Similar Pattern of an overall trend of price fall can be seen here.
- Out of 559 configurations majority (78%) of the configuration saw a price drop on an overall level while 22% of the configurations were able to have stable prices and in some cases even had an increase in their prices.

For example in Configuration 858 the prices are stable and even see a 13% price rise on an overall level.

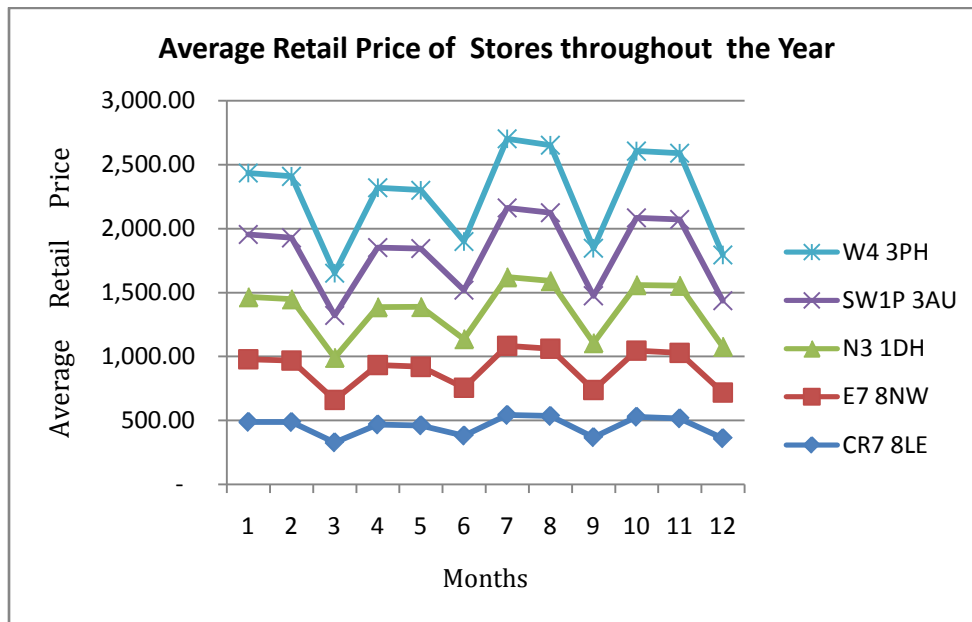


- Are prices over retail outlets consistent?

- ✓ Overall Prices of laptops are consistent in all stores throughout the whole year with the exception of these 5 stores- SW1P 3AU, CR7 8LE, W4 3PH, N3 1DH, E7 8NW who are highly inconsistent.



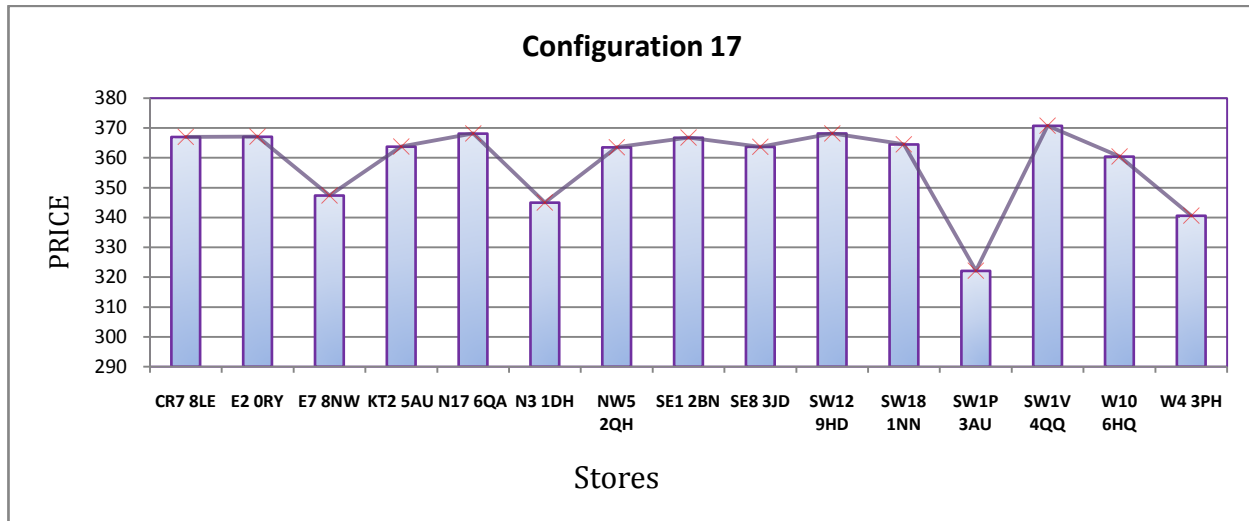
- On further examination it was found that all these 5 stores followed a pattern where they had a sudden fall in retail price at the end of each quarter (i.e. in the 3rd, 6th, 9th and 12th month of the year) indicating a possibility that these stores were offering discounts at around 25-26%.



- How does price change with configuration?

- ✓ There is a price variation among different configurations.
- ✓ A similar pattern can be seen among all the configurations of the price variation being very high at the end of each quarter which is about 70%.
- ✓ Price change is also related with stores as prices of configurations fluctuate depending upon the store.

In this case for example price of Configuration 17 show a variation among different stores where it is being sold



STORES

- Where are the stores and customers located?

- ✓ The nearest store for a customer can be 0km

(as location code CR78LE is common with both-customers and stores location codes)

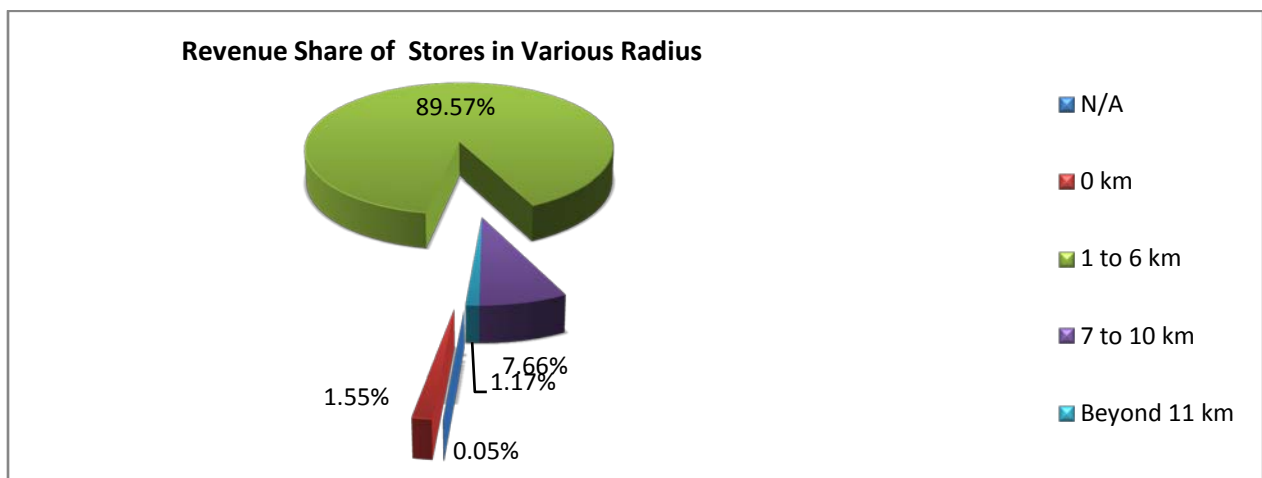
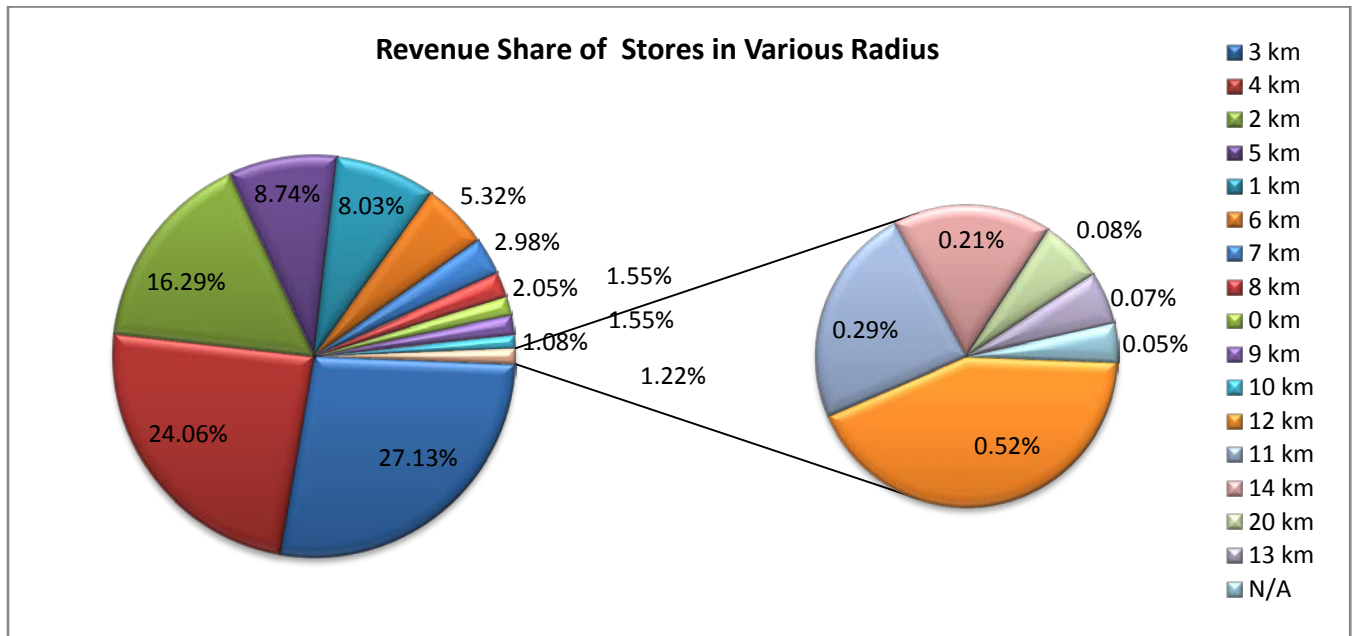
- ✓ On average a customer travels around 3.5kms to reach a store

- Which stores are selling most?

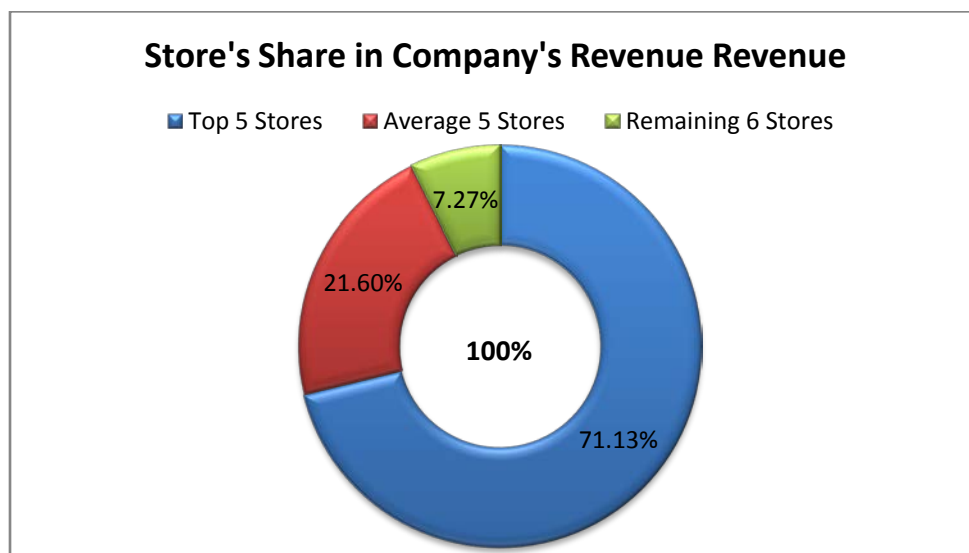
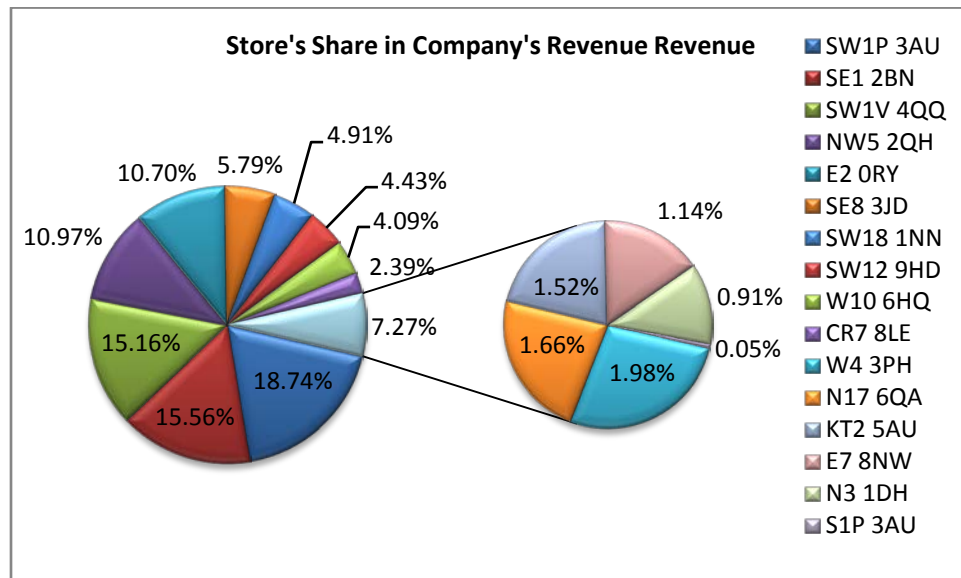
- ✓ If distance is taken as basis then stores who are around in **1-6 km** of radius contribute around **90%** of total revenue to the company while stores **beyond 11 km** radius contribute to only **1.17%** towards company's revenue.

➤ Thus more stores should be opened in the radius of 1-7 km of every major residential block.

Kilometer	3 km	4 km	2 km	5 km	1 km	6 km	7 km	8 km	0 km	9 km	10 km	12 km	11 km	14 km	20 km	13 km	N/A
Share (in%)	27.13	24.06	16.29	8.74	8.03	5.32	2.98	2.05	1.55	1.55	1.08	0.52	0.29	0.21	0.08	0.07	0.05



- When each store's share is calculated in the total revenue of the company the **top 5 stores** turn out to be **SW1P 3AU, SE1 2BN, SW1V 4QQ, NW5 2HQ, E2 0RY** which make up for **71.13%** of company's revenue share while other 5 stores namely **SE8 3JD, SW18 1NN, SW12 9HD, W10 6HQ, CR7 QLE** contribute **21.6%** towards the revenue while the **remaining** stores have only **7.26%** share in the total revenue of the company of this year

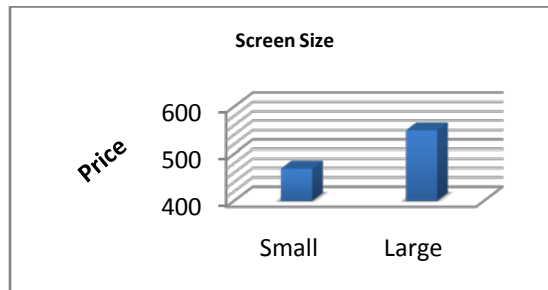


- How far would customers travel to buy a laptop?
- ✓ Customers have been found traveling around 20 km to reach a store

Configuration

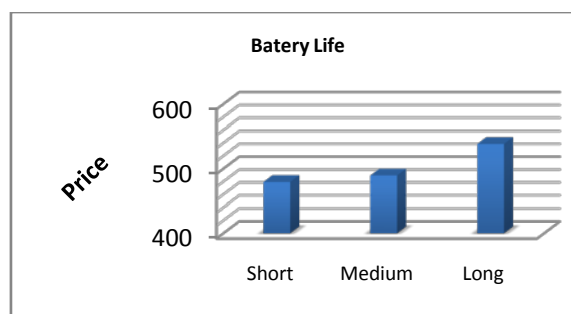
- What are the details of each configuration, and how does this relate to price?
- ✓ Features among the laptops have a positive impact on the retail price however some features greatly increase the retail price.

Screen	
Small	Large
468.75	549.3



Average retail price of a laptop with small screen is 468.75 while with large screen is 549.3 thus causing a rise in retail price by a substantial **14.67%**

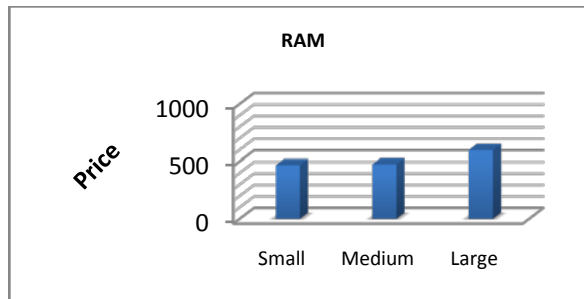
Battery		
Short	Medium	Long
479.37	489.5	538.73



Average retail price of a laptop with short battery is 479.37 while with medium battery is 483.5 thus causing a rise in retail price by mere **2.06%** but laptop with long battery has a average price of 538.73 which causes a further increase in retail price by **9.13%**.

Thus customer should be encouraged to buy laptop with long battery rather than medium battery as it greatly increases the retail price.

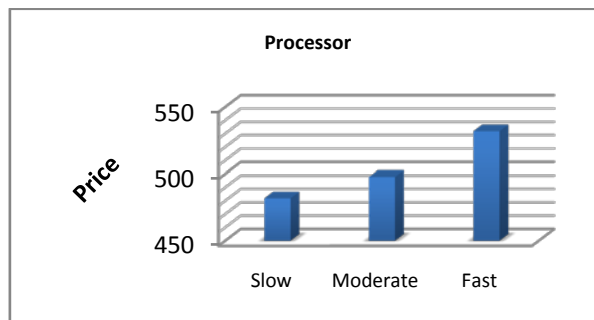
RAM		
Small	Medium	Large
467.6	475.12	598.54



Average retail price of a laptop with small RAM is 467.6 while with medium battery is 475.12 thus causing a rise in retail price by mere **2.06%** but laptop with long battery has a average price of 538.73 which causes a further increase in retail price by **9.13%**.

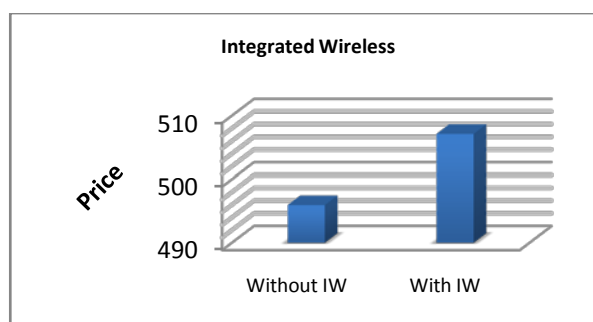
Thus customer should be encouraged to buy laptop with long battery rather than medium battery as it greatly increases the retail price.

Processor		
Slow	Moderate	Fast
481.88	497.75	531.85



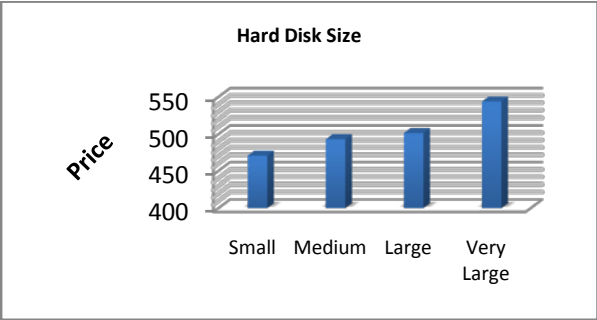
Average retail price of a laptop with slow processor is 481.8 while with moderate processor is 497.5 Thus causing a rise in retail price by **3.18%** while laptop with fast processor has a average price of 531.85 which causes a further increase in retail price by **6.4%**

Integrated Wireless	
Without IW	With IW
495.97	507.13



Average retail price of a laptop without Integrated Wireless is 495.97 while with large screen is 507.13 thus causing a rise in retail price by mere **2.20%**

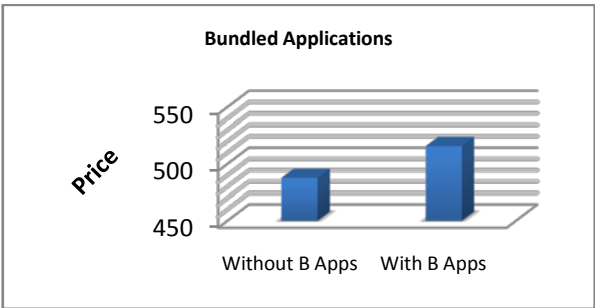
Hard Disk Size			
Small	Medium	Large	Very Large
470.78	493.08	501.55	543.65



Average retail price of a laptop with small hard disk size is 470.78 while with medium hard disk is 493.08 causing a rise in retail price by a substantial **7.74%** while laptop with large hard disk size has a average price of 501.55 which causes a further increase in retail price by mere **1.6%** but laptops with a very large hard disk size has average retail price of 543.65 which causes further increases the price by **4.52%**.

Thus customer should be emphasized to buy laptop with medium or very large hard disk size as it considerably increases the retail price.

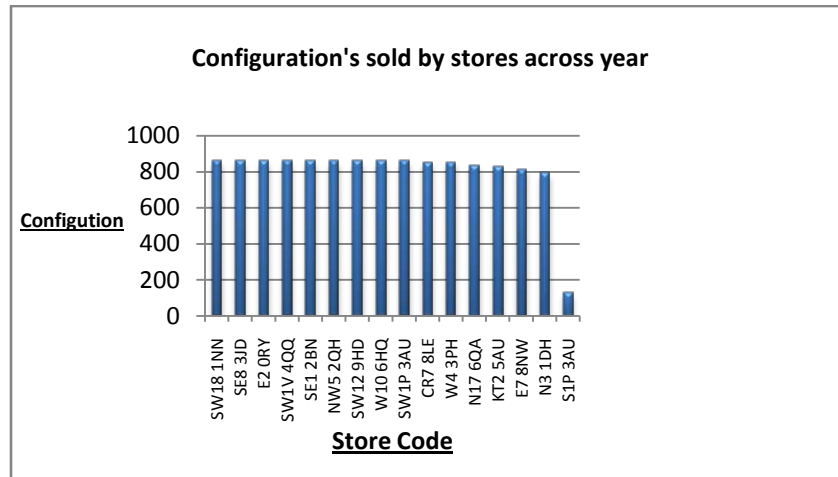
Bundled Applications	
Without B Apps	With B Apps
487.66	515.78



Average retail price of a laptop without bundled application is 467.66 while with bundled applications is 515.78 thus causing a rise in retail price by **5.45%**

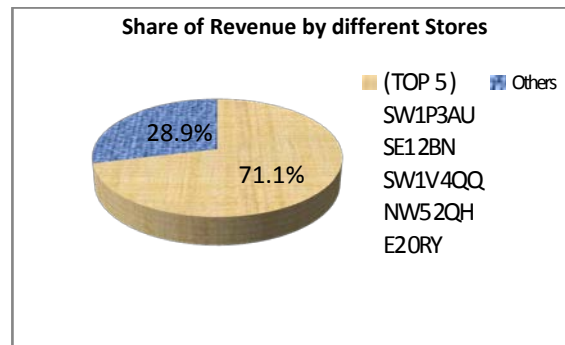
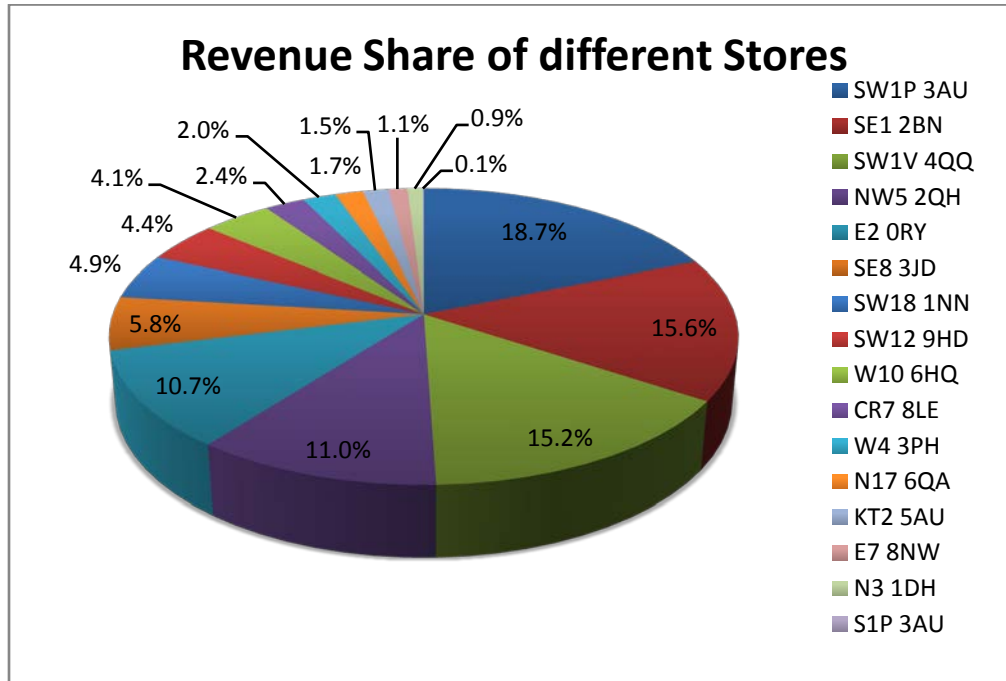
- **Do all stores sell all configurations?**

- ✓ Out of the 16 stores across the city 9 stores sold laptops with all kinds of configuration while others sold less configurations. S1P 3AU sold drastically low configuration with selling only 134 configurations throughout the year.



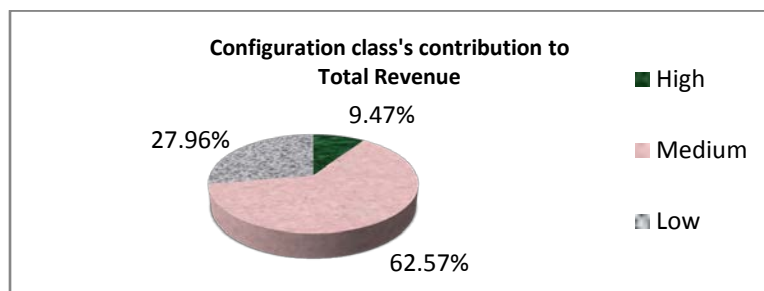
REVENUE

- How do the sales volume in each store relate to company's revenues?
- ✓ 5 stores - SW1P 3AU, SE1 2BN, SW1V 4QQ, NW5 2QH, E2 0RY contribute around 71% to the company's total revenue while the remaining 11 stores contribute to around 29% of company's total revenue



• How does this depend on the configuration?

- ✓ All Configuration Classes contribute to the company's total revenue but medium configuration class contributes highest with 62.57% while High class configuration contributes to only about 9%



- What statistical technique should be applied to predict the sales of the company in 2010.
- Since the data existed only for 12 months , predicting sales for 2010 will be challenging.
- We can apply Time Series Forecasting Technique.
- The last months contribute to around 88% of the total revenue. *(This can be due to the fact that many configuration starts to sell from the 6th month that's why there is a sudden increase in the revenue in the last 7 months as out of all the configuration 65% were sold in the last 7 months and out of the remaining, 37% were not sold in the 2nd ,3rd ,4th and 5th month and were sold only in the first month along with last 7 months making the last 7 month a major contributor to the total revenue.)*

