



## **BDM PROJECT FINAL TERM SUBMISSION**

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## **Sri Lakshmi Venkateshwara Mobiles**

### **EXECUTIVE SUMMARY:**

Selling mobile part spares and repairing mobiles are the services offered by Sri Lakshmi Venkateshwara mobiles. It is a B2C business model. Getting damaged items, products having more price fluctuations, finding more unsold products are the problems faced by the shopkeeper. Try to solve the problems faced by him by using the past data got by him, by analysing the sales, revenue and implementing some excel tools like pivot tables and VLOOKUP and Data visualization. This project is expected to address the problems mentioned by the owner by collecting data and finding out the solutions to problems using Excel and Python.

Firstly, mentioned the detailed explanations of analysis and methods undergo to find the solution to problems and find the insights among the data. Clearly explain the formula how to calculate the loss due to price fluctuations. And then write the results and findings in this project. Here pareto principle is not hold on this data in both revenue and sales of the firm. Screen guards is the bestselling product and Bluetooth devices is the least selling product. Screen guards and mobile cases are key contributors in overall revenue. Got the more damaged products in screen guards. And least in Bluetooth devices. And also analyse the price fluctuations among all the product and its contribution in overall profits and losses. Visualise the profits and revenue week wise to get some insights. Finally mention the interpretation of results and recommendations to the vendor for better profits and its growth in that sector.



**Above picture shows the shop of the vendor and its products.**

The main objective of the project is to find the insights using the past data. And solves the problems faced by him using that data using some tools and visualise the data.

Objectives of this project is to:

- find the products having more price fluctuations
- find the products where he got damaged products frequently
- Products whose stock not sold completely.
- Suggest the products which gives more profit

## ANALYSIS PROCESS AND METHODS:

- **Pareto analysis:**

Perform the pareto analysis to know the pareto principle holds or not. And also it shows the contribution of products in the parameters we take like revenue, sales etc... There will be a pareto chart for both revenue and sales

- **Analysis on sales and revenue:**

In order to find the insights among all the products regarding revenue and sales, we visualise the revenue and sales among all the products in pie charts where it shows the contribution of products in that parameter in percentage.

- **Analysis of damaged products and its loss:**

Analyse the damaged products among all the products to solve the business problem mentioned in proposal. And also to find the contribution of products in overall loss made by the vendor.

- **Analysis on price fluctuations:**

To find the solution to business problem mentioned, will do the analysis on Price fluctuations. Here, will try to find which product undergoes price fluctuations frequently and its losses. Here we use this formula to find the loss (or) profit due to price fluctuations:

$$\text{LOSS} = (\text{B.P} - \text{N.B.P}) * \text{N}$$

- B.P is the buying price in previous week
- N.B.P is the buying price in present week
- N is the number of unsold products in previous week.
- Positive sign indicates loss and negative sign indicates profit due to it.

- **Analysis on profits:**

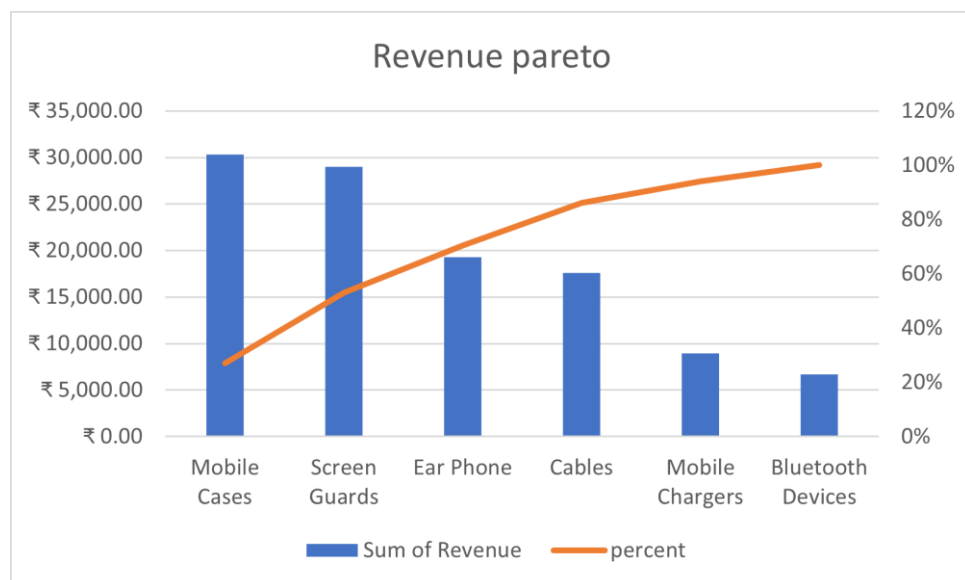
Here analyse the data to find the insights related to profit among all the products and also analyse profit per week and profit per unit.

## RESULTS AND FINDINGS:

### a) Pareto analysis:

- **Revenue pareto:**

- It is statistical technique says that 80 percent of the Revenue generates from 20 percent of the products. To check this, we performed required operations by using pivot table.
- Below chart shows the revenue pareto analysis of the data, here 80 percent of the revenue comes from the 4 products namely Mobile cases, Screen guards, Ear phone and cables, but here 20 percent means only one product. So, here also the principle does not hold. Below chart is the visualisation of revenue pareto analysis of this data

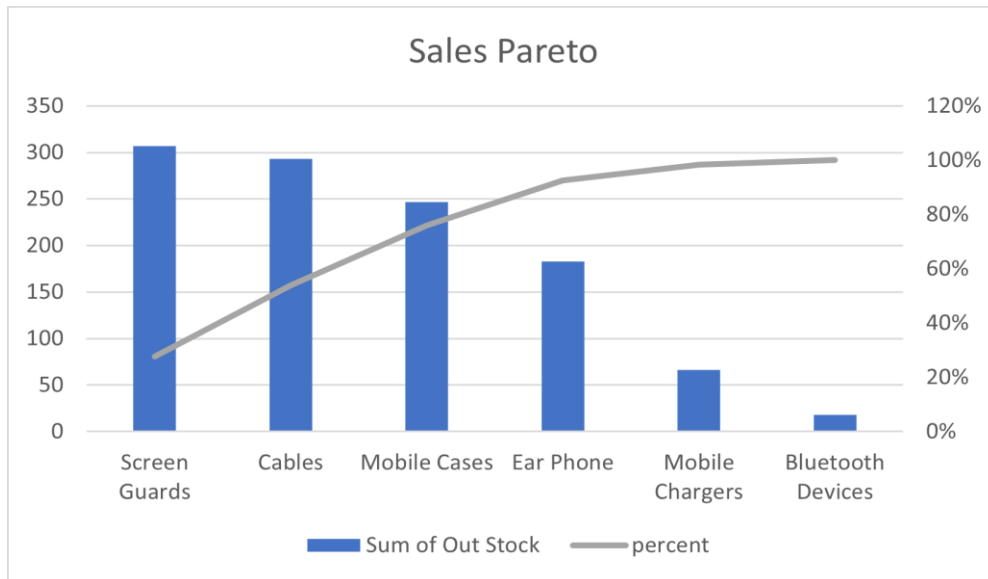


- **Sales pareto:**

- Here, the top 20 percent of products does not produce the 80 percent of sales.
- Here we see the sales pareto analysis of the products in below chart, nearly 80 percent of sales come from three products. This analysis says

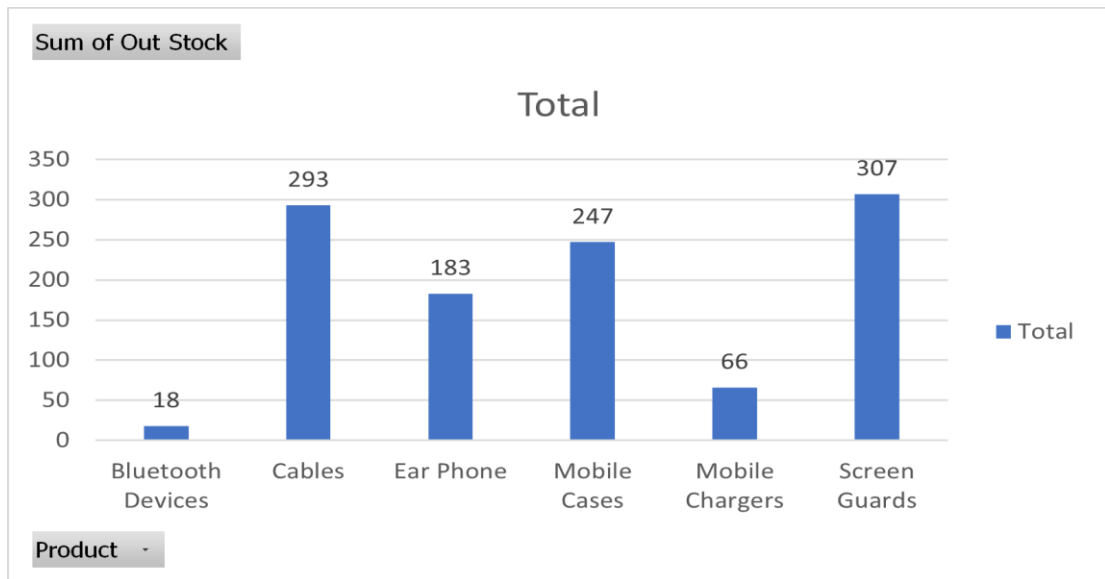
that only 20% of products (one product) needed, but here three products contribute to 80 percent of volume.

- So, volume pareto analysis was not worked. Screen guards, cables and mobile cases contributes 80 percent of the volume of stock sold.



#### **b) Sales:**

- Sales is very important in any business. Increase of sales leads to give good revenue and profits. Sales is the symbol of loyalty between business firm and consumer. Below chart shows the sales of these products separately.

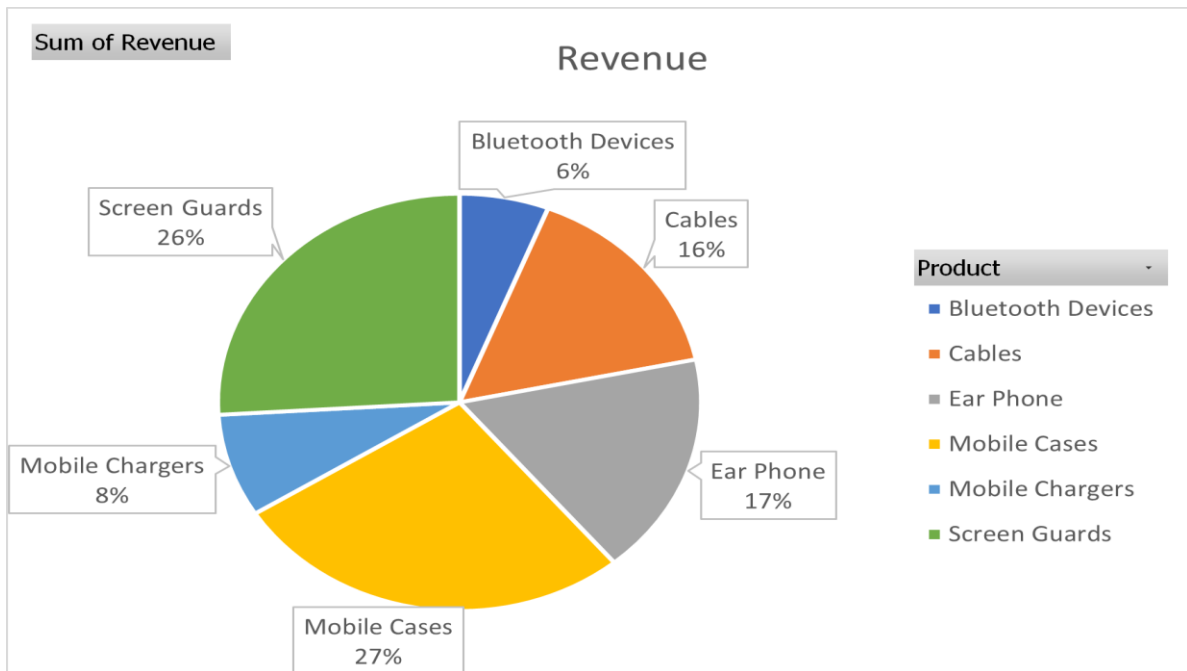


- Screen guards is the most sold category product because it is guard to mobile and also it gets damaged frequently. So, the consumers also bought this product frequently. After that cables and mobile cases respectively.
- Bluetooth devices is the category getting low sales because of high cost and rarely used product. But it contributes high to revenue if sales go well.

### c) Revenue:

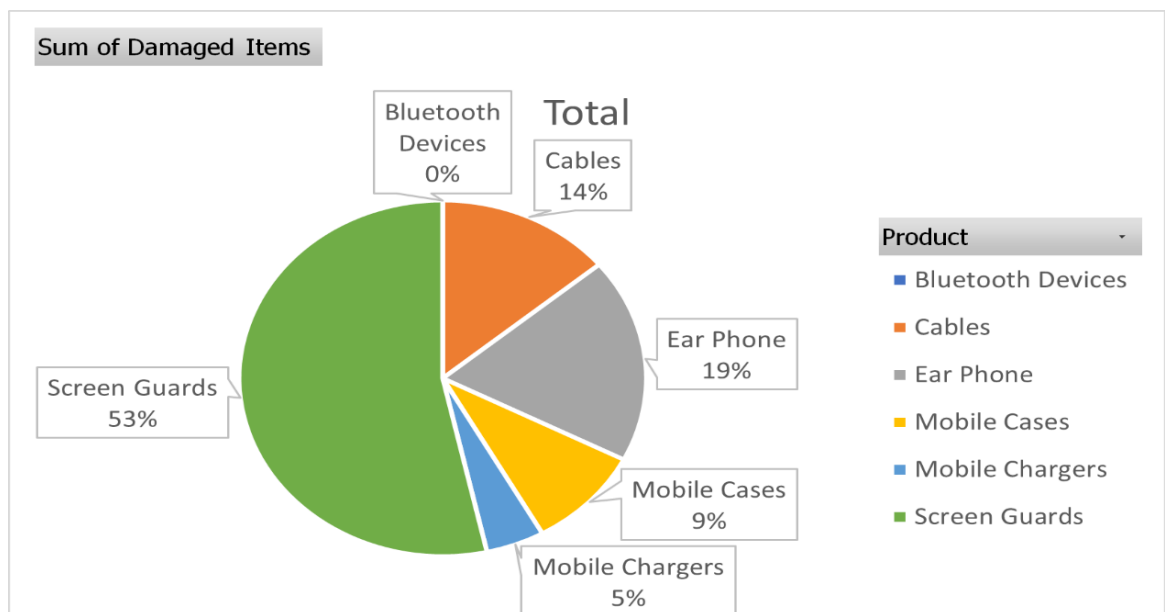
- Revenue is the indicator of performance of any firm and it plays a vital part in business. Good sales lead to getting good revenue.
- Screen guards and mobile cases are major contributors to revenue of this firm with 26 percent and 27 percent respectively. And then earphones, cables and chargers respectively. Minor contributor is Bluetooth devices due to its low sales.





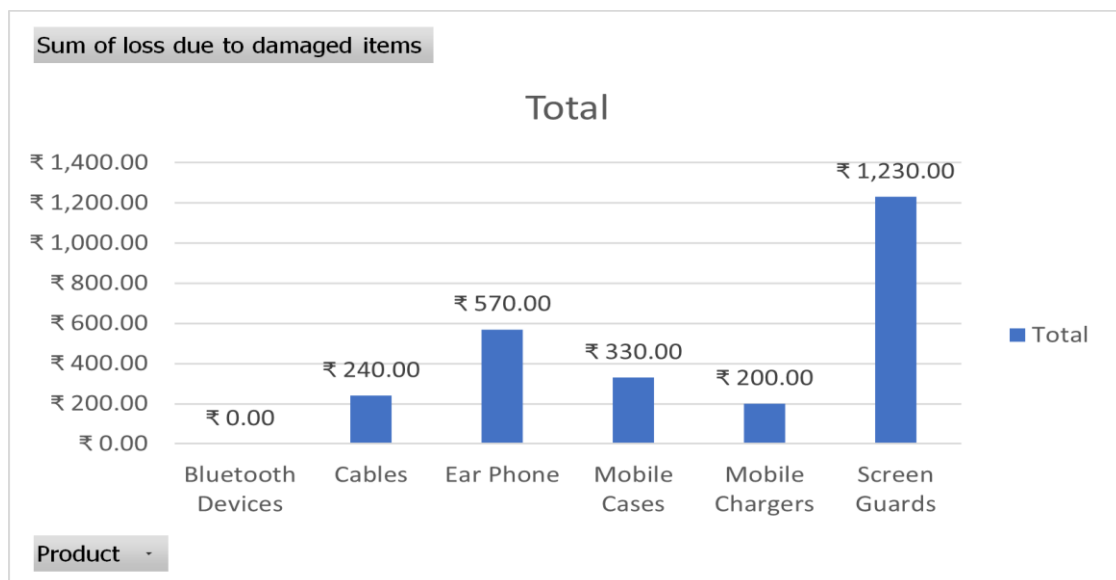
**d) Damaged products:**

- Damaged products is the one of main factor for getting loss. So, one could need to take care regarding these products. By exploring the mobile shop data, noted that screen guards is the main contributor in getting damaged products with 53 percentage. And next ear phones with 19 percent and then cables with



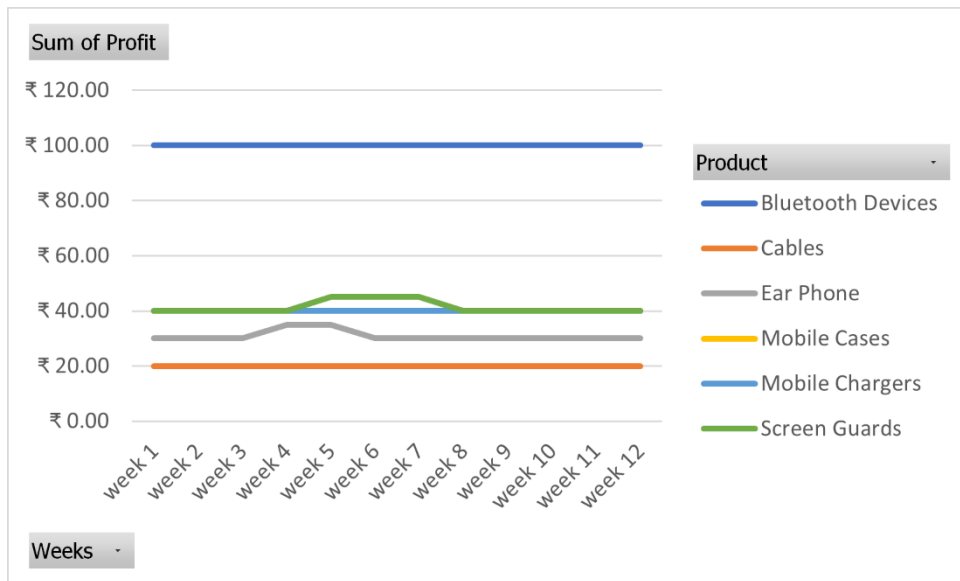
14 percent.

- Bluetooth devices is the only product getting no damaged products. Mobile chargers and mobile cases with 5 percent and 9 percent respectively. Below pie chart shows the percentage of damaged products across all the products.
- Damaged products make the shopkeeper away from the profits because there is no use of these products and it makes loss. As a result, these products influence the overall profits of the firm. Here, the below chart shows the amount of loss made across each product. Screen guards category having maximum loss of Rs 1230 and ear phones with Rs 570. And then Mobile cases, mobile chargers and cables with losses Rs 240, Rs 200, Rs 240 respectively. There is no contribution in loss by Bluetooth devices.



#### e) Profit per unit:

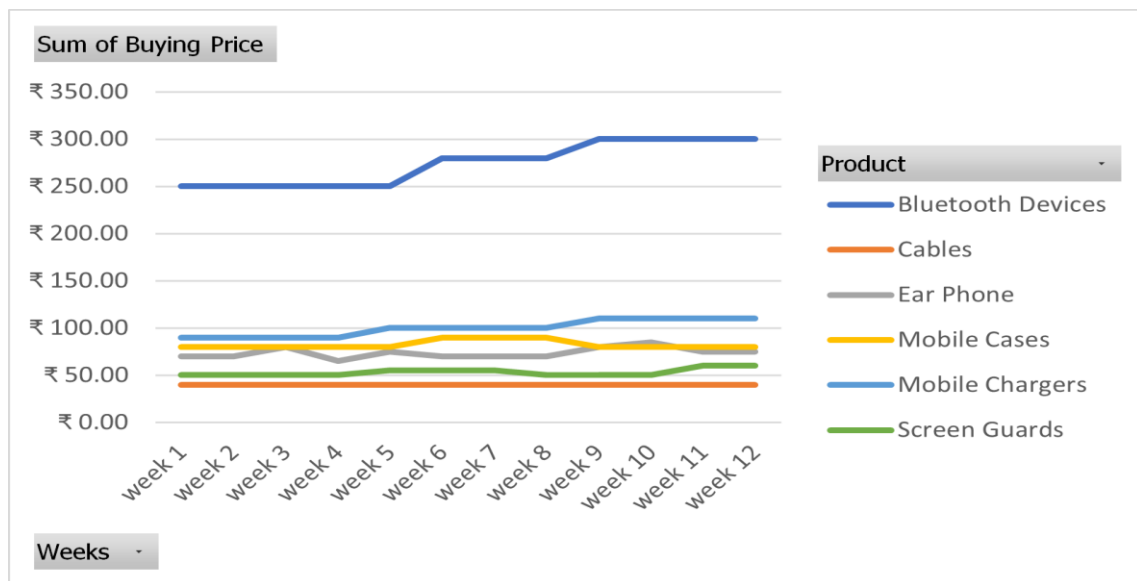
- Profit per unit means how much profit one can make per unit that is sold. The below chart shows the profit per unit of each product. It determines the total profit.



- Profit per unit of ear phones and screen guard's unit prices are changed slightly between week 3 and week 8 where as other product's profit per unit is constant through all weeks.
- Profit per unit is maximum for Bluetooth devices but it's sales is very less.

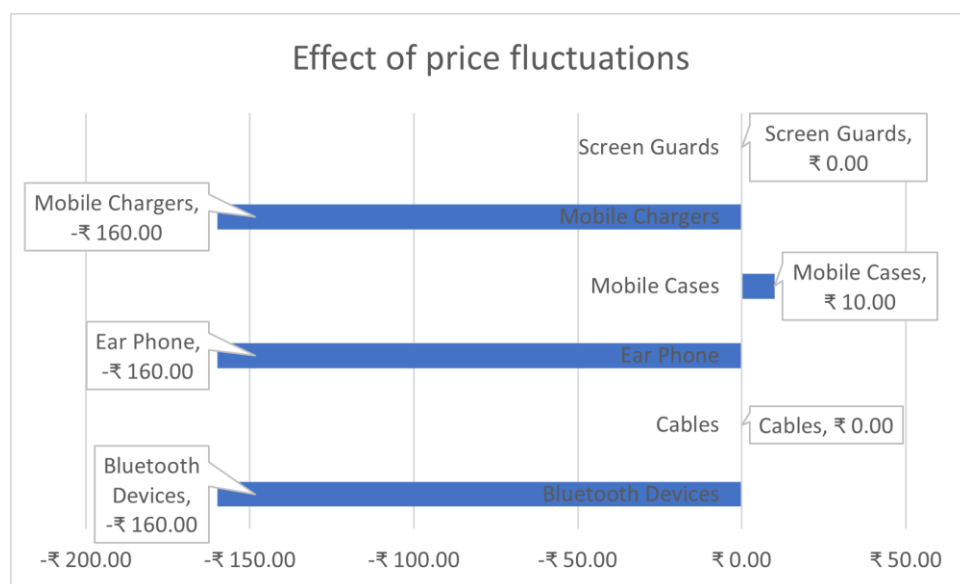
#### f) Price fluctuations:

- Price of any product cannot be constant, it changes with respect to demand and supply. Here also change in price of products taken place. Price fluctuations causes profit or loss depend on the previous price. Shop keeper experienced both profits and losses due to price fluctuations.
- Cables is the only category of products having no price fluctuations. Prices of Bluetooth devices, earphones and mobile cases are changes frequently. Slight changes are observed in prices of screen guards and chargers. Below chart represents the variations in prices visually.



**g) Losses due to price fluctuations:**

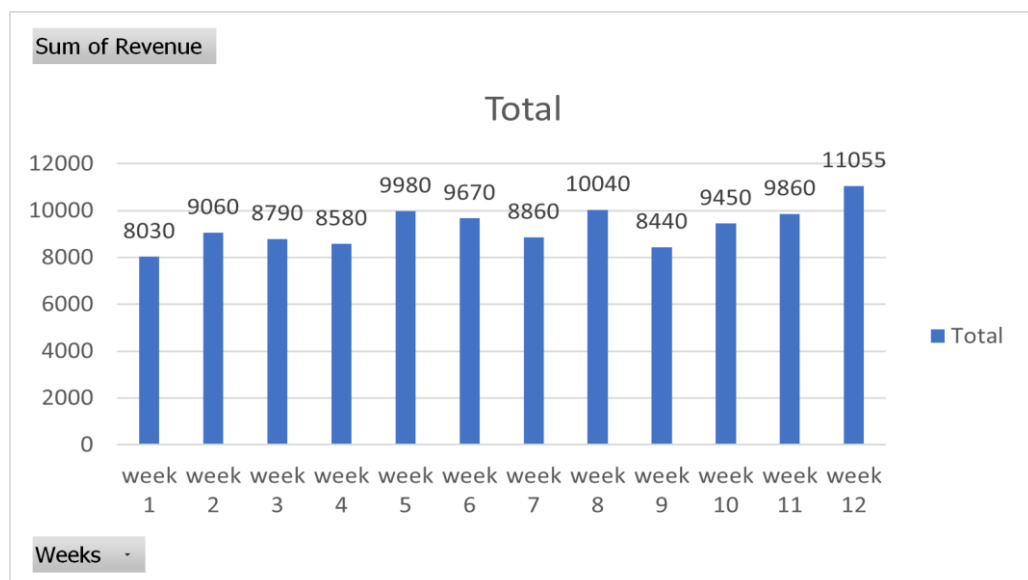
- Generally, losses in this business is influenced by two factors:
  - Due to damaged products
  - Due to price fluctuations.
- Losses due to damaged products are discussed already. Now, it is due to price fluctuations, price of any product is not constant. It can change time by time. Sometimes it leads to profit and sometimes it leads to loss.



- If price of product is increased in present week, the unsold stock in previous week gives extra profit when it sold in present week.
- If price of product is decreased in present week, the unsold stock in previous week gives losses when it sold in present week.
- Below chart shows the distribution of losses due to it across various products.  
**Here positive sign indicates the loss and negative sign indicates the profit.**
- Gained extra profit of Rs 480 by selling mobile chargers, ear phones and Bluetooth devices due to the price fluctuations.
- No profit and loss in screen guards and cables due to it. Mobile cases are the only category getting loss of Rs 10 due to it.
- Sum of loss due to it and loss due to damaged items gives total loss incurred in that particular week.

#### h) Revenue vs Week:

- Here, the below chart shows the distributions of revenue over weeks.

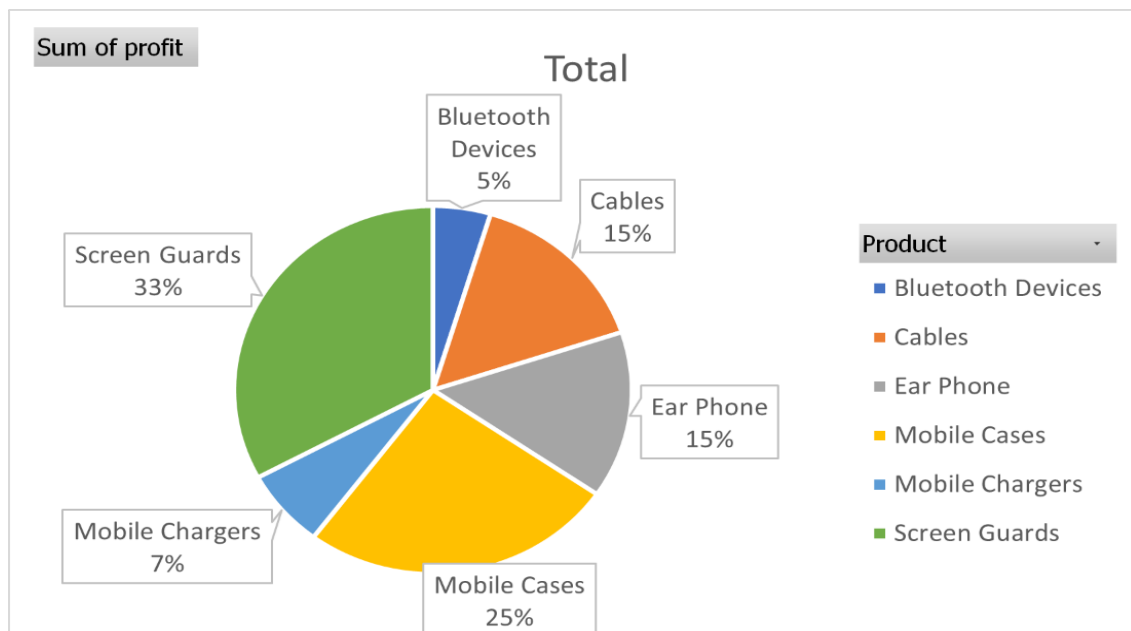


- Week 12 is the week having highest revenue and then week 8, week 5 and week 11 respectively. Lowest revenue is observed in first week.

- It is observed that there is an upward trend in revenue from week 9 to week 12.  
Upward trend in revenue is a good sign in business.

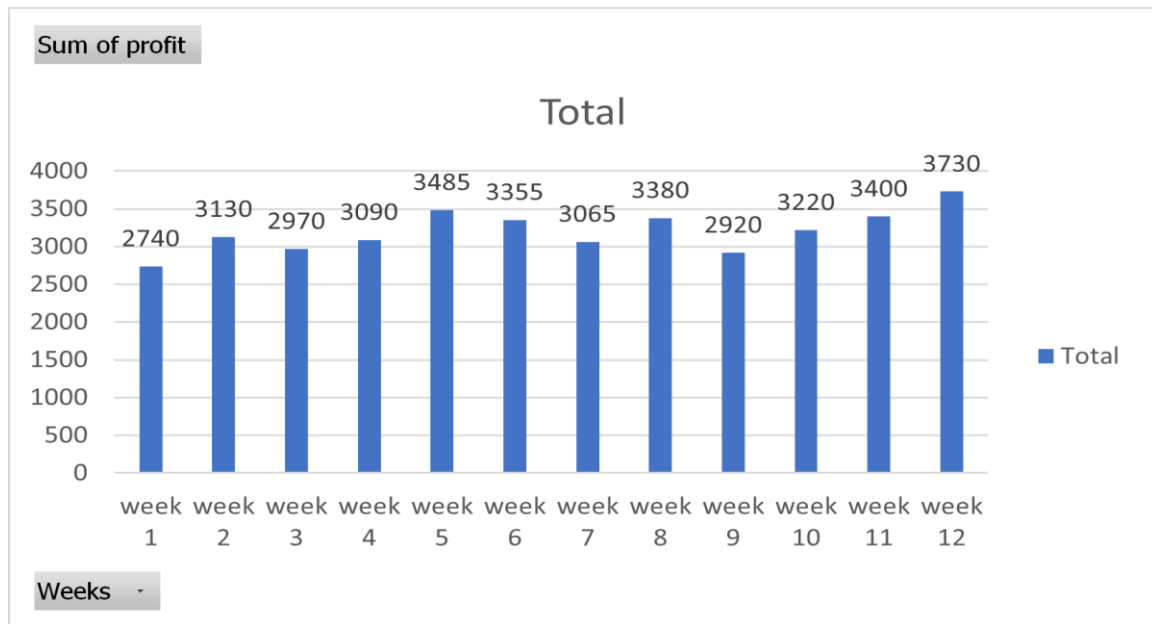
#### i) Profits:

- Making profit is essential for any business firm to expand its operations. It is an index of performance for any business.
- Below pie chart shows the contribution of each product in total profit obtained in given time period. Screen guards is the most profit giving product because of its high sales. And then mobile cases, ear phones and cables respectively.
- Bluetooth devices' contribution in profits is very less due to low sales, but its margin is high when compared to other products. If its sales go well, then it would be the highest contributor in total profits.



### j) Profits vs Week:

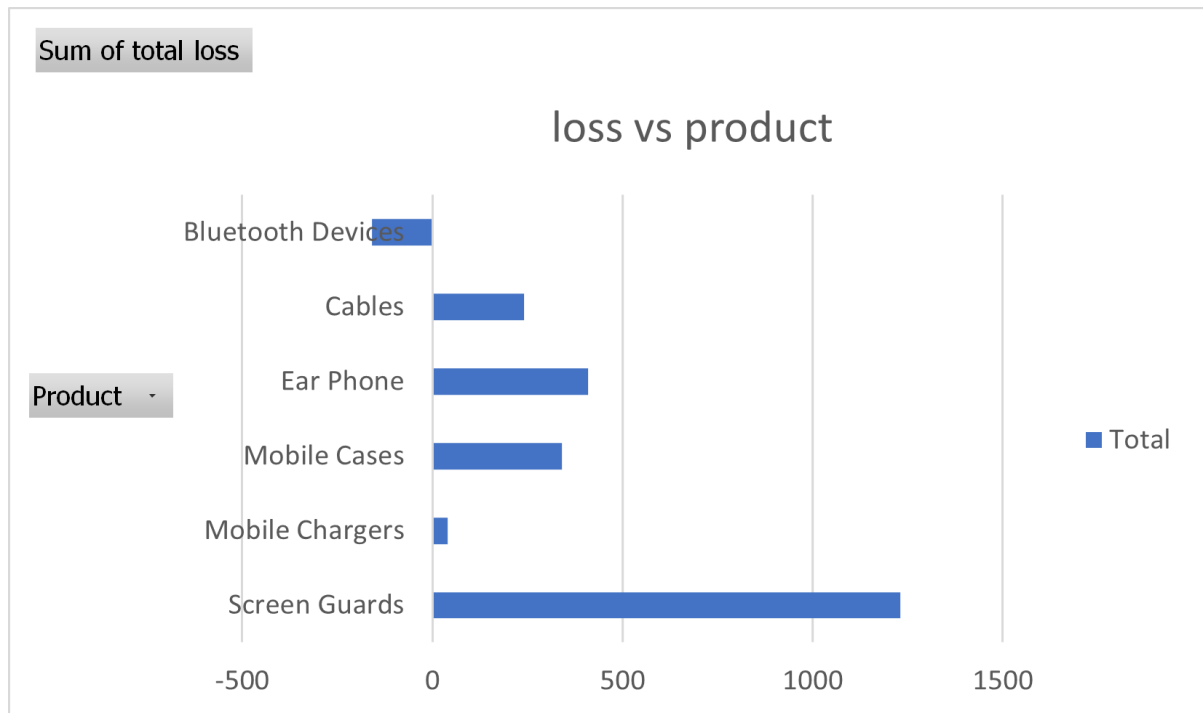
- Week 12 is the week getting highest profits among all weeks may due to it is a highest revenue getting week. Week 1 noticed the least profit.



- Observed that the profit vs week and revenue vs week having same patterns. Here also there is an upward trend from week 9 to week 12.

### k) Loss vs Product:

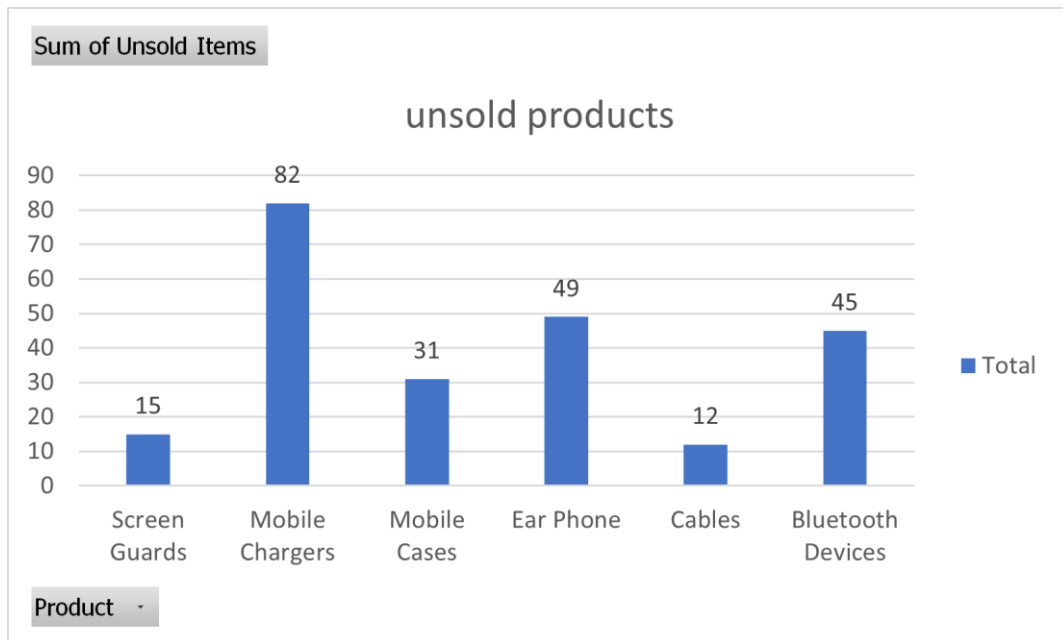
- Each product is responsible for overall profits and losses, but need to know how much. So made a bar chart which shows the amount of loss given by each product during this time period.
- Loss is influenced by damaged products and price fluctuations.
- Below chart showing that Bluetooth devices in reverse direction it means that it gives the profit irrespective of loss due to the price fluctuations takes place.
- Screen guards is the most loss giving product due to getting more damaged products. Damaged products directly lead to loss due to its lack of functionality.



#### 1) Unsold products:

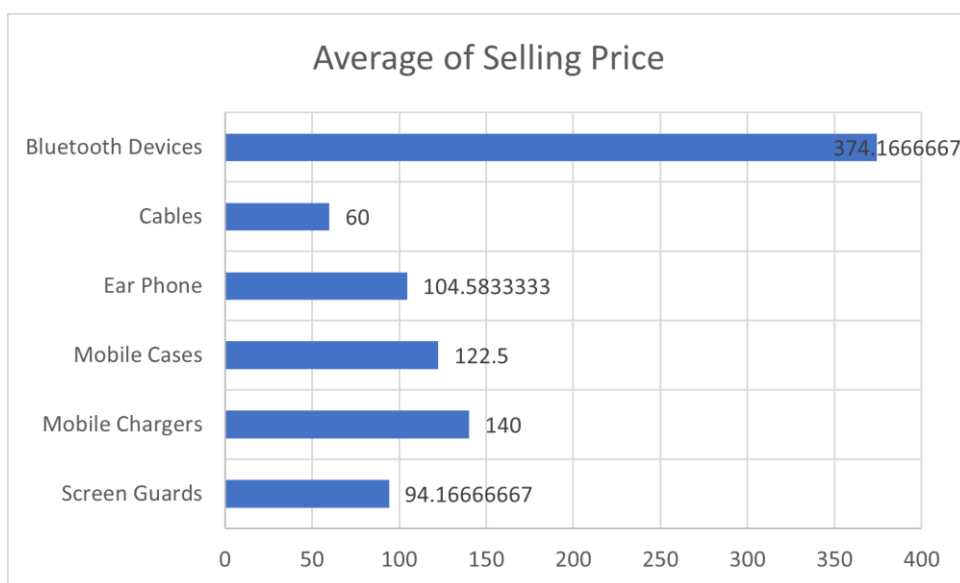
- Unsold products are the main cause for effect of price fluctuations on the overall profit and loss.
- These unsold products would take as in stock for the next week at that price.
- Due to this price difference leads to losses or profits because of price fluctuations among all the products.
- Here, the below chart shows the sum of unsold products in each category over all weeks.
- Mobile chargers is the category of most unsold products and least in cables. Ear phones and Bluetooth devices also recorded the greater number of unsold products over all weeks.





**m) Comparing Average selling prices of products:**

- Here did the comparison of average selling price of all the products in this time period.
- Below chart shows the average selling price of each product. Bluetooth devices average selling price is very higher than other products. Cables average selling price is same as original price in all weeks because of no change in its price across all weeks.



## **INTERPRETATION OF RESULTS:**

1. 20 percent of the total products sold are not generating 80 percent of total sales and revenue. It shows that pareto principle does not hold in this project. Screen guards is the best-selling product and also the major contributor towards the overall revenue. Bluetooth devices is the category of low sales and poor contributor in overall revenue.
2. Screen guards is the main contributor in loss due to damaged products. And there is no contribution by Bluetooth devices in loss due to damaged products because of low sales and high cost. And also, more damaged products got in screen guards' category and no damaged products got in Bluetooth devices category.
3. Profit per unit is maximum in Bluetooth devices and it also varies in some products in between week 3 and week 8. Price fluctuations causes profit and loss both depend on the price changes. Cables is the only product having no price fluctuations.
4. Got the highest revenue and highest profit in week 12 and lowest revenue and profit in week 1. Observed upward trend in both profit and revenue from week 9 to week 12.
5. Screen guards is the key contributor in overall profits after deducting losses due to damaged products and price fluctuations. And Bluetooth devices is poor contributor to overall profits due to its low sales.
6. Observed upward trend in both revenue and profit from week 9 to week 12. It is the good sign to its business.

## **RECOMMENDATIONS:**

From the above findings following are the recommendations for the firm that would help them in achieving their goals.

1. Vendor need to maintain some more stock of screen guards to avoid stock out situation. Similarly, can reduce the stock of Bluetooth devices due to its low sales in that location.
2. Suggested to check the screen guards before taking from the dealer because vendor got damaged products frequently in that category.
3. Don't need to bother about price fluctuations because it causes profit more times than losses. But it doesn't happen always, it depends on other factors. Most of the times it favours.
4. Try to increase the sales in Bluetooth devices because profit per unit is maximum in that category. Increase of sales in screen guards and mobile cases gives some more extent to overall profit.
5. Focus on to maintain the greater number of stocks in screen guards, mobile cases and cables.

## **CONCLUSION:**

Because of this capstone project, I gained in-hand experience in analysing the real time business data. Due to this, I gained the practical experience of all the techniques and tools mentioned in the course. From this project I try to find the solutions to the problems faced by the owner of Sri Lakshmi Venkateshwara Mobiles. And suggested some solutions to these business problems and recommendations to help to increase in profits.