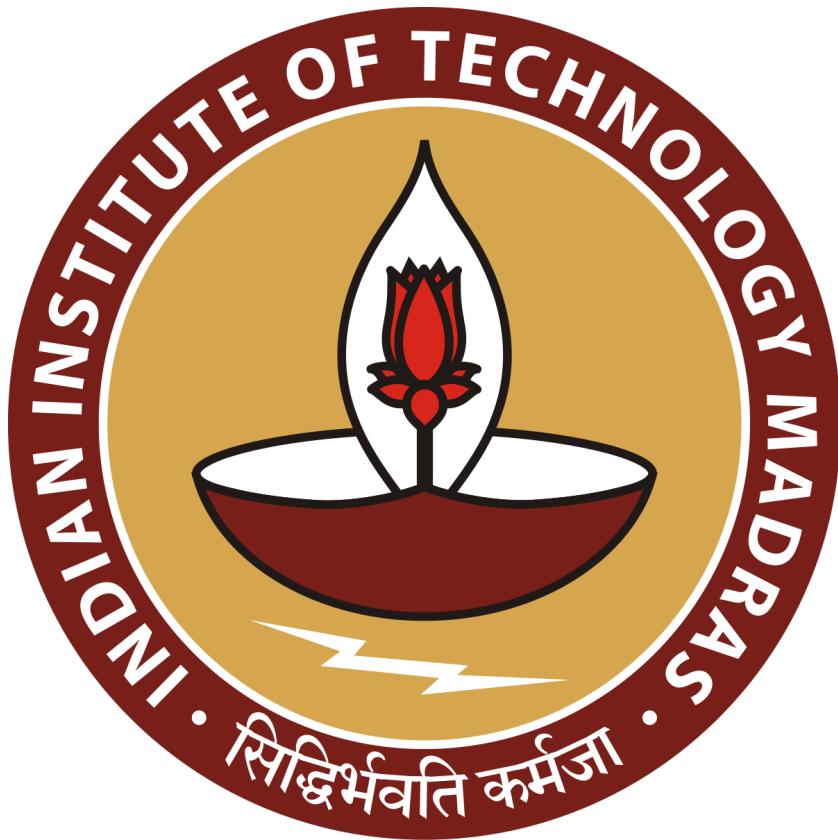


**Driving Sales Growth and Expanding Market Reach:
A Strategic Solution for Audio Visuals Inc**

Mid Semester Report

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1 Executive Summary

This mid-sem report focuses on conducting an extensive analysis of sales data using descriptive statistics and data visualization techniques. The primary objective of this project is to gain valuable insights into the sales data and utilize the findings to make informed decisions and identify potential growth opportunities.

To achieve this, various statistical methods, such as mean, median, mode, and variance⁴, were applied to effectively summarize the central tendencies and dispersion of the data. Additionally, visualizations, including bar charts, line graphs, and histograms, were used to explore the relationships between variables and identify trends in revenue across different product categories.

Moreover, a thorough state-wise and category-wise analysis was conducted, enabling targeted marketing efforts and optimizing resource allocation to improve overall efficiency. One crucial aspect of the analysis involved comparing the cost prices of products sold by Audio visuals, with those offered by Amazon.

The final report will present a data-driven approach that offers the best solution for Audio visuals to enhance their sales performance. By analyzing sales data and employing strategic insights, the report will provide actionable recommendations to optimize marketing efforts, pricing strategies, and resource allocation.

2 Proof of originality





3 Video

Video link

4 Metadata and Descriptive Statistics

In this project, the organization provided access to all bills generated between 15th April 2023 and 31st May 2023. These bills were populated into Excel for analysis, focusing on four major areas: Sales Data Analysis, Customer Segmentation Analysis, Time Series Analysis, and Comparative Analysis, complemented by Descriptive Statistics.

The sales data for Audio Visuals spans from 15th April 2023 to 31st May 2023, comprising more than 100 rows. The columns contain essential information such as the cost price of products, revenue generated from sales, Amazon prices, invoice numbers, and product categories.

- The Sales Data Analysis sheet gives a clear picture of revenue gained from each product category. Additionally, a quantity-wise analysis is performed to understand the sales volumes of different products. Furthermore, the analysis includes a state-wise breakdown to gain insights into revenue performance across different regions.
- The Timely Analysis sheet is focused on a month-wise evaluation of product categories. This analysis allows for the identification of seasonal patterns or trends in sales performance throughout the given timeline.
- The Comparative Insights sheet is focused on the comparison of Audio visual's pricing with Amazon's pricing. This comparison is done based on the product's price and it can be used to provide a good pricing strategy for audio visuals.
- Customer-wise analysis is conducted by segmenting customers based on their purchasing amounts. It is classified with the amount spent by the customers and the no of invoices.

5 Descriptive Statistics

Descriptive Statistics is a branch of statistics which involves summarizing the major features of a data set. This branch of statistics involves summarizing the data and analysing patterns involved it. In this report I have included measures of central tendencies and measures of central dispersion.

5.1 Price related data

Value of products	
Product with highest price	Apple Customized Mac Book Pro 13 inch
Mean	₹18562.74242
Median	₹9533.5
Mode	₹423
Variance	₹738286177.7
Minimum	₹127
Maximum	₹167203

5.2 Amazon Price related data

Amazon Price Of Products	
Product with highest price	Studio Display Standard Glass
Mean	₹21963.13636
Median	₹12000
Mode	₹12000
Variance	₹977710477.7
Minimum	₹130
Maximum	₹159000

5.3 Bill and Invoice related data

No. of Invoices	
Mean	1.864197531
Median	1
Mode	1
Variance	2.41882716
Minimum	1
Maximum	7

Bill Amount	
Mean	₹68124.60494
Median	₹16500
Mode	₹10169
Variance	₹22453222957
Minimum	₹360
Maximum	₹1113506

5.4 Studio And Service Related Data

Price of Studio and Services	
Mean	₹195793
Median	₹36368.5
Variance	₹93753398254
Minimum	₹350
Maximum	₹1113506

Bill Amount of Studio and Services	
Mean	₹202403.7143
Median	₹54875
Variance	₹91222713761
Minimum	₹1271
Maximum	₹1113506

6 Analysis Process And Methods

I have collected bills during the time period of April 2023 to May 2023 and populated it into excel. After cleaning and organizing the data I found that I could do analysis on the sales of the products, price of products and customer segmentation. Additionally I have also populated the excel sheet with the Amazon price of each product sold by Audio visuals to do comparative analysis. In this mid sem report my major focus is on descriptive statistics and visualizing the analysis done by me using charts.

6.1 Sales Related Data

I have used pivot tables in my data set to extract the sales related data. This data includes the price of individual products sold by Audio Visuals. After obtaining the sales data I categorized the products into 11 categories based on its type. Later I used more pivot tables to do descriptive analysis and graphical representations. In statistical analysis I found the lowest and highest prices of products using excel functions and also used the formulae mean, median, mode and variance. A state wise analysis was also made by using filters in excel.

6.2 Studio And Service Related Data

The studio and sales related data was not structured and to structure it I had to eliminate certain missing values and fill some missing values by getting more detailed data from Audio visuals. After doing it, I categorized the data into 2 categories namely studio and service. I used excel's filter option to organize the data and later used pivot tables to do descriptive statistics and graphical representations. I have done statistical analysis in this data and found mean, median, mode, variance, minimum and maximum prices of each category.

6.3 Customer Related Data

After cleaning and structuring the data set, I obtained the customer related data by using pivot tables. I used filter option to obtain the count of invoices customer wise. I also used pivot tables to obtain the amount spent by each customer in Audio Visuals. Later I did statistical Analysis and constructed charts for customer related data. Statistical Analysis includes mean, median, mode and variance.

6.4 Amazon Price Related Data

After cleaning my whole data set and organizing it, I populated the data set with the amazon price of each product sold under sales category by Audio visuals. This was done for comparative purposes. Later I have used pivot tables to obtain the category wise split up of prices of products in both Amazon and Audio visuals. I performed statistical analysis and constructed charts for this data.

7 Findings And Insights

7.1 Customer Related Data

- The Customer with highest purchase history is Apporva Interiors with a purchase amount of ₹11,13,506
- The customer with second highest purchase history is Sean Roldan with a purchase amount of ₹4,28,345
- Total no. of bills recorded: 151
- Maximum no of invoices from a single customer is 7
- Average amount spent by a customer is ₹68,124
- The customer with maximum no of invoices is Albequerque Records Pvt and the bill Amount is ₹3,15,771

Figure 1: Purchase amount of customers

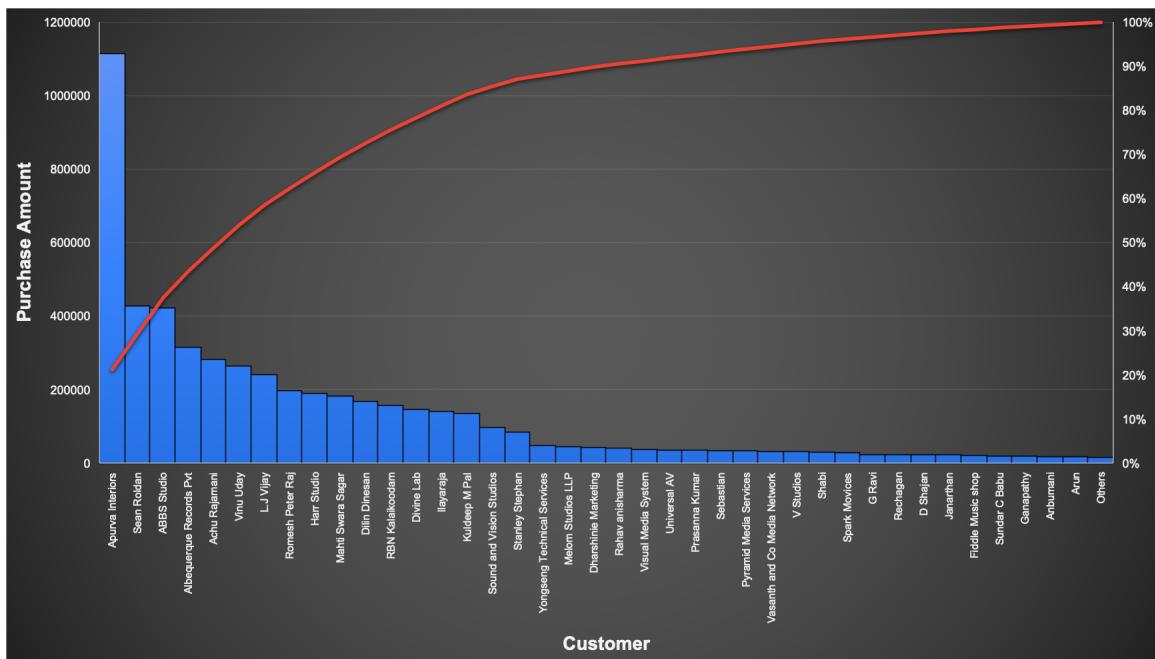
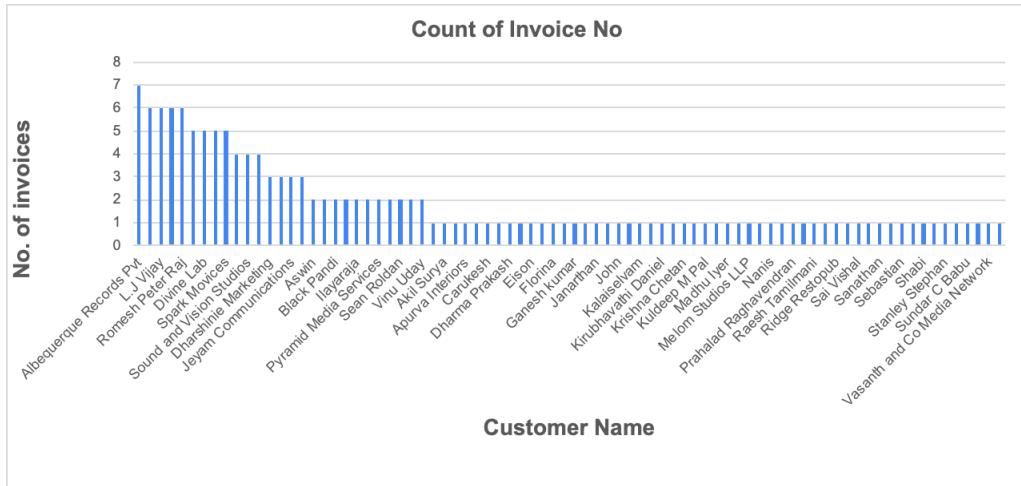


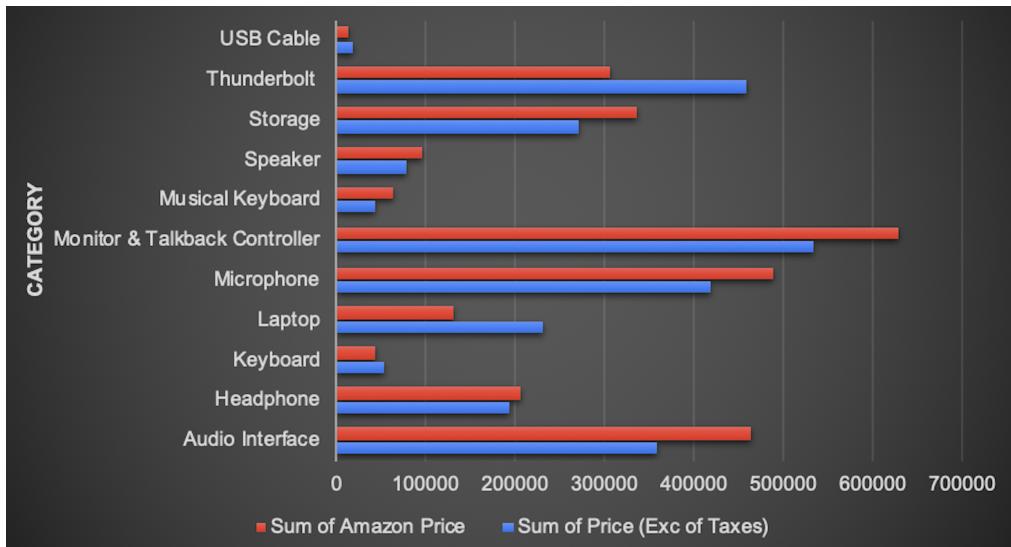
Figure 2: No. of invoices



7.2 Amazon Price Related Data

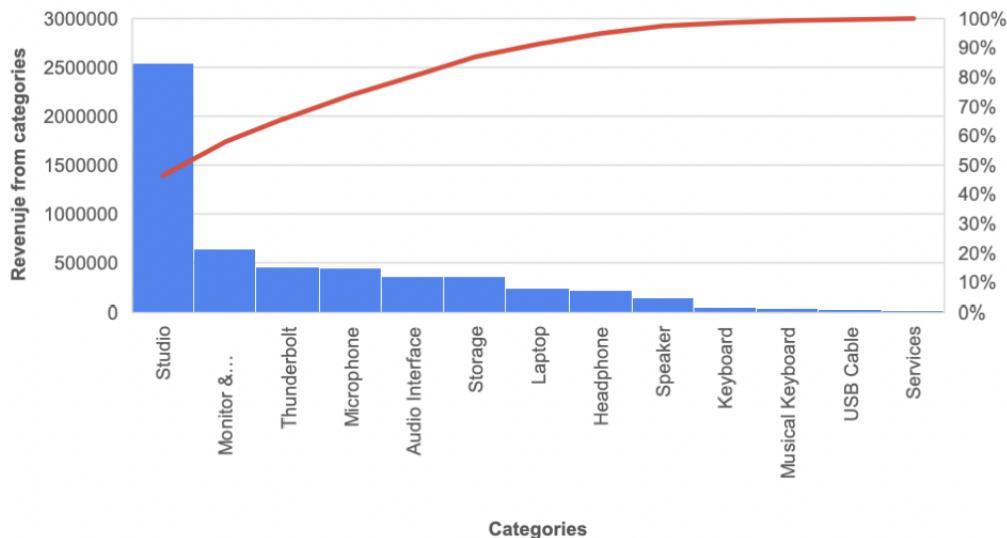
- The categories which have Amazon price lesser than the cost price of audio visuals are USB, Thunderbolt, Laptop and Keyboard.
- Product with highest Amazon price is Studio display standard Glass with amazon price of ₹1,59,000.00 and cost price of ₹1,35,508.00
- Average price of an amazon product is ₹12,000
- On an average Amazon products are 30% higher in price compared to audio visual's products.

Figure 3: Amazon price & Audio Visual's Price

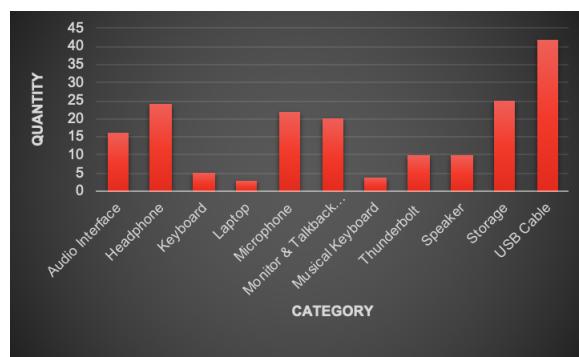


7.3 Revenue Data

Figure 4: Revenue from categories



- More than 80% of audio visual's revenue is from studio.
- From sales sector, Monitor & Talkback Controller gives the highest revenue of ₹6,42,096
- The USB cable stands out as the category with the highest quantity of purchased products.
- Laptop stands out as the category with the highest quantity of purchased products.
- Among the five states that purchase products from Audio Visuals, Tamil Nadu leads with the highest percentage of revenue generated.



Quantity and categories

