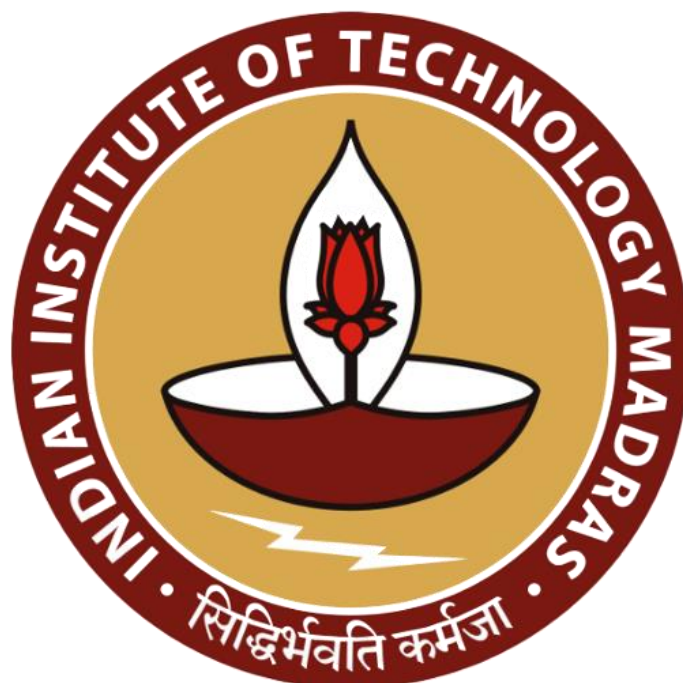


# **INDIAN INSTITUTE OF TECHNOLOGY, MADRAS BS, DATA SCIENCE, AND APPLICATIONS**

## **BUSINESS DATA MANAGEMENT CAPSTONE FINAL SUBMISSION**



### **Debtor and Demand Forecasting for an Tea and Handloom Job Work Trading Company**

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## Executive Summary:

- This final report is a culmination of the project, where a detailed analysis was conducted to provide results and recommendations for the problems stated in the initial proposal. The Kuber Enterprises is a Tea and handloom dealer and a wholesaler shop based in Panipat, Haryana. This report aims to analyze the operations, products, and sales patterns of B2B and B2C, providing Handloom and other materials to a local retailer, except sometimes directly providing material to customers. Their customer base includes retailers in many parts of North India.
- Understanding sales patterns is crucial for any business, as it enables companies to identify areas of growth, and make informed business decisions. The tea and handloom industry is highly competitive, and understanding sales patterns is essential to stay ahead of the competition. The project's title makes it clear that it is addressing a critical issue in the context of the industry.
- Firstly, it identifies the scope and focus of the project. This indicates that the project will be examining sales data and trends to gain insights into the company's performance in a particular area. By focusing on sales patterns, the project aims to gain a comprehensive understanding and the title highlights the importance of the project. By specifying the focus on sales patterns, the title emphasizes the relevance of the project to the company's overall success.
- Secondly, the purpose of the report is to identify the improvement areas of the business by analyzing sales and purchase data and extracting meaningful insights from it have debtors' data. The revenue, side provided income and expenditure data but it is not used here as it is. Every time the stock is out will come and they will purchase the product and sell it to the customer on the same day.
- The final stage of the project involved a detailed analysis of the dataset using pivottables, lookups, and graphs in MS Excel. Based on the findings from the calculations, some results were obtained, and suggestions were made to improve business operations.

- The analysis began with the use of pivot tables and vlookups to organize and filter data effectively. Graphs were used to visualize the data and identify trends and patterns. The results obtained from the analysis helped to identify areas that required improvement, such as inventory management and sales.
- Based on the findings, several inferences were made, including the need for better inventory management, more targeted marketing strategies, and the importance of tracking customer satisfaction levels. Suggestions were also provided to improve operations, such as implementing a just-in-time inventory management system, analyzing sales data by SKU, and conducting quantity segregation to better understand their needs and preferences.
- To ensure the accuracy of the findings, a short discussion with the business owner was held. All results, findings, and possible ways to overcome the identified problems were suggested.
- The initial rough analysis conducted in the first stage provided an overview of the potential problems that the business may be facing. This stage aimed to identify the key areas that require further investigation. The identified problems were then confirmed through discussions with the business owner, allowing for a more accurate assessment of the issues.
- Overall, the analysis provided valuable insights into the business's operations, and the recommendations and suggestions made will help to improve efficiency and profitability. MSEXcel proved to be a powerful tool for data analysis and visualization, and its use in this project provided a clear understanding of the business's performance and areas for improvement.

## **Detailed Explanation of Analysis Method:**

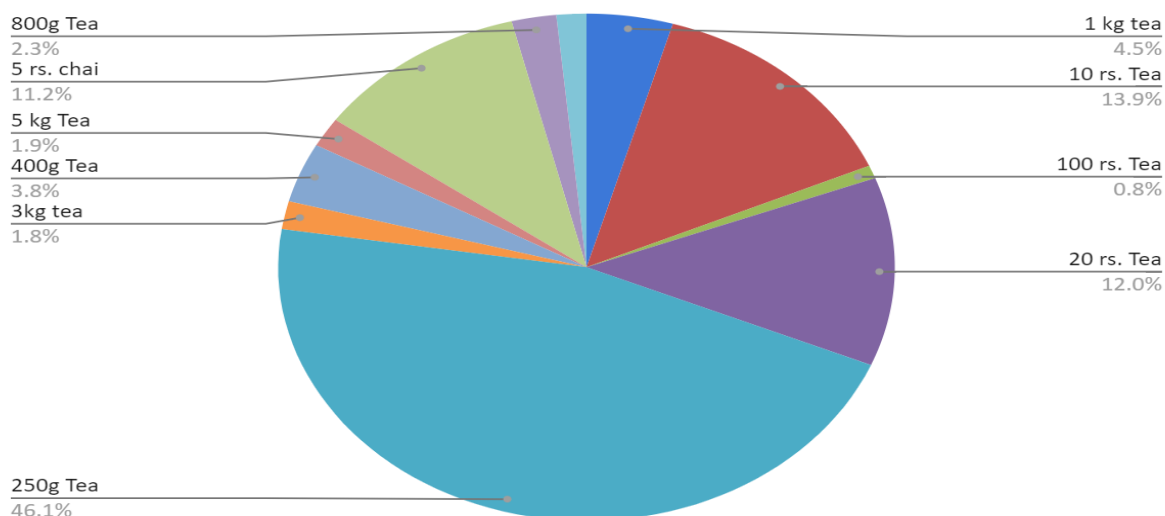
**DATASET LINK - <https://drive.google.com/drive/folders/16g7QkPYmAwokSFk-4krMyDBDP0SPO5Sr?usp=sharing>**

- The organization has a diverse range of products. However, to streamline their analysis process, they have chosen to focus on a smaller subset of 10 SKUs. These 10 SKUs were

selected because they represent a significant portion of the organization's market share and have well-maintained data. This approach allows the organization to efficiently analyze key products and make informed decisions based on the insights gained.

- It's worth noting that among the products, there are about 10-12 that were primarily introduced to attract new customers, but they are not generating as much profit as the 10 SKUs that were selected for analysis. By prioritizing the analysis of these key products, the organization can identify areas for improvement and optimize its offerings to increase profitability and meet the needs of its customers.
- Overall, the organization's decision to focus on a smaller subset of SKUs for analysis is a strategic one that allows them to make the most of their resources and time. By choosing the products with the highest potential for success and the most relevant data, they can ensure that their efforts are focused on maximizing profitability and meeting the needs of their customers.
- The study described the process of converting data collected through paper forms into an Excel sheet for further analysis. The process was time-consuming and attention-demanding, mainly due to handwriting difficulties and unfamiliar short forms. Despite these challenges, the study was successful in selecting the top eight selling products across five different cities and creating pivot tables, Pareto charts, and pie charts to examine market share and profitability.

Contribution of Tea SKUs in Sales



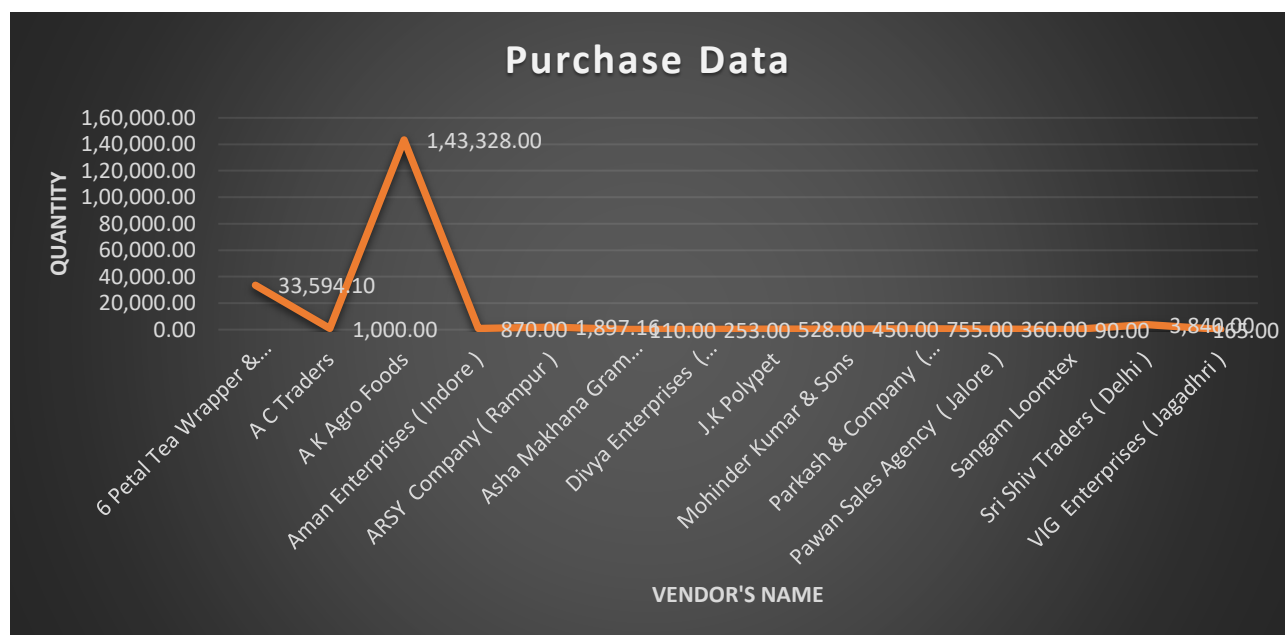
## Descriptive Statistics of different SKUs

20rs tea		5 RS CHAI		10 rs tea	
Mean:	96436.32	Mean:	99029.426	Mean:	94534.90154
Mode:	51429.6	Mode:	18571.8	Mode:	4571.4
Standard Error:	24279.87232	Standard Error:	32479.40013	Standard Error:	20568.95343
Standard Deviation:	80527.22645	Standard Deviation:	102708.8815	Standard Deviation:	20568.95343
Sample Variance:	6484634199	Sample Variance:	10549114330	Sample Variance:	5923145834
Kurtosis: -	3.837401866	Kurtosis: -	0.74087569	Kurtosis: -	1.266023672
Skewness:	1.654844099	Skewness:	1.306933147	Skewness:	0.481586731
Range:	295213.44	Range:	307827.58	Range:	221870.13
Minimum:	4571.52	Minimum:	4178.66	Minimum:	4571.4
Maximum:	299784.96	Maximum:	312006.24	Maximum:	226441.53
Sum:	1060799.52	Sum:	990294.26	Sum:	1228953.72
Count:	11	Count:	10	Count:	14
800G TEA		others		400g tea	
Mean:	51766.275	Mean:	11522.7708	Mean:	67083.6
Mode:	18104.35	Mode:	0	Mode:	25236
Standard Error:	33127.4815	Standard Error:	7289.83581	Standard Error:	35142.3514
Standard Deviation:	66254.963	Standard Deviation:	25252.732	Standard Deviation:	78580.6865
Sample Variance:	4389720124	Sample Variance:	637700474	Sample Variance:	6174924293
Kurtosis: -	3.99735513	Kurtosis: -	9.67396771	Kurtosis: -	4.53277254
Skewness:	1.99921499	Skewness:	3.04192523	Skewness:	2.11956615
Range:	133037.85	Range:	88572	Range:	180852
Minimum:	18104.35	Minimum:	0	Minimum:	25236
Maximum:	151142.2	Maximum:	88572	Maximum:	206088
Sum:	207065.1	Sum:	138273.25	Sum:	335418
Count:	4	Count:	12	Count:	5
1kg tea		3kg tea		5KG TEA	
Mean:	399356.8	Mean:	31478.94	Mean:	82678.8
Mode:	399356.8	Mode:	9942.48	Mode:	4640.1
Standard Error:	nan	Standard Error:	12065.3078	Standard Error:	78038.7
Standard Deviation:	nan	Standard Deviation:	26978.8485	Standard Deviation:	110363.3879
Sample Variance:	nan	Sample Variance:	727858266	Sample Variance:	12180077395
Kurtosis: -	nan	Kurtosis: -	3.01912075	Kurtosis: -	nan
Skewness:	nan	Skewness:	1.72345216	Skewness:	nan
Range:	0	Range:	67311.36	Range:	156077.4
Minimum:	399356.8	Minimum:	9942.48	Minimum:	4640.1
Maximum:	399356.8	Maximum:	77253.84	Maximum:	160717.5
Sum:	399356.8	Sum:	157394.7	Sum:	165357.6
Count:	1	Count:	5	Count:	2
250g tea		100 rs tea			
Mean:	271226.046	Mean:	18285.87		
Mode:	4205.76	Mode:	4571.4		
Standard Error:	74283.90435	Standard Error:	5283.811243		
Standard Deviation:	287700.3244	Standard Deviation:	10567.62249		
Sample Variance:	82771476674	Sample Variance:	111674645		
Kurtosis: -	0.169035274	Kurtosis: -	1.345181557		
Skewness:	1.04409636	Skewness:	0.807052922		
Range:	910081.44	Range:	22857		
Minimum:	4205.76	Minimum:	4571.4		
Maximum:	914287.2	Maximum:	27428.4		
Sum:	4068390.69	Sum:	73143.48		
Count:	15	Count:	4		

By conducting a statistical analysis of their sales data and discovering several interesting insights. The skewness value for all the SKUs was found to be positive, indicating that the data was skewed to the Right, meaning the tail of the distribution extends further to the right than the left. In other words, the majority of sales were concentrated towards the lower end of the range. On the other hand, the kurtosis value for 20Rs Tea was the highest, suggesting that the data was heavily concentrated around the mean and it has fewer outliers and a flatter peak than a normal distribution.

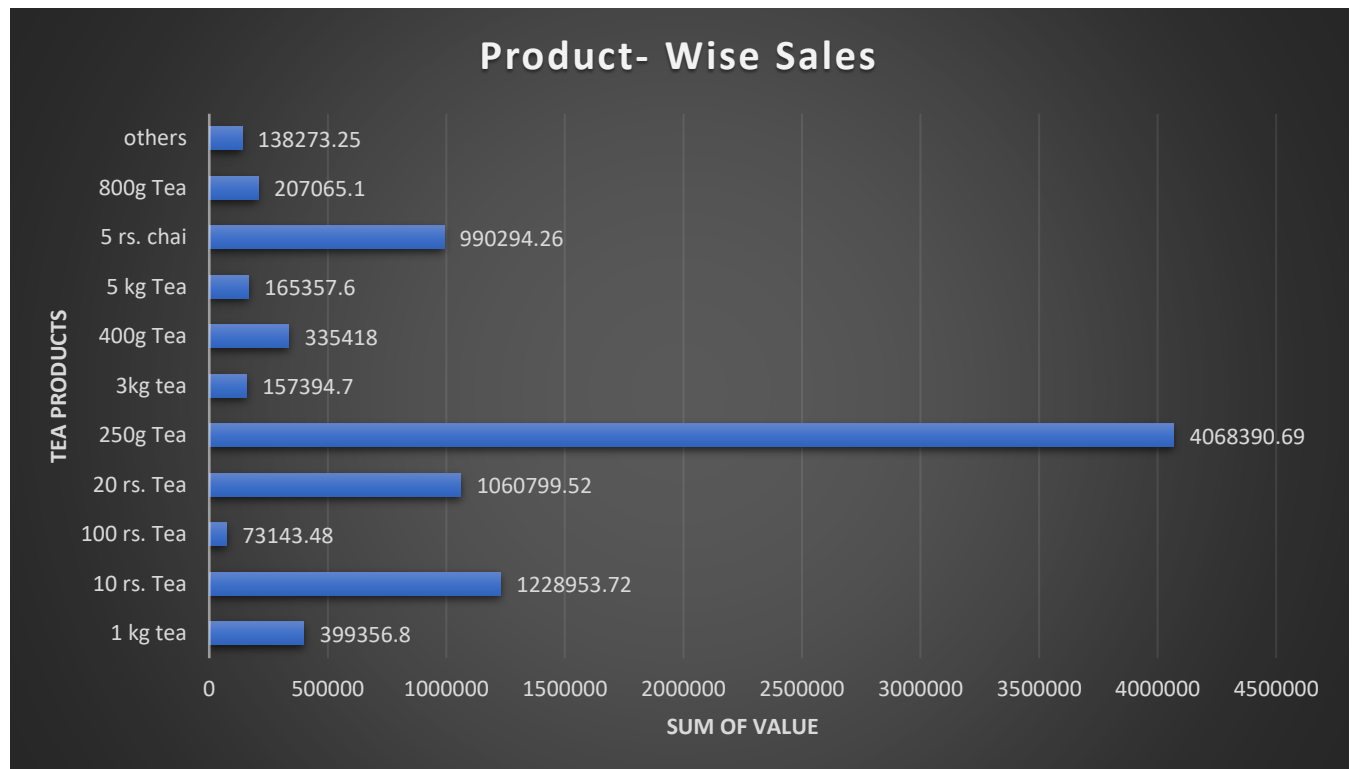
## **Performance Analysis of Tea and Handloom Sales**

The company provided us with a vast amount of data, and we decided to focus on analyzing the performance of Tea. The data included information on the product name, input, and output quantities and values, as well as the corresponding month. We used descriptive statistics to examine the data and found that 250g Hargun Zaika tea was the best-selling product in terms of quantity, sold in three months. However, in terms of revenue, 250g Hargun Zaika generated the most income. Finally, we discovered a decline in input and output quantities and values in January, which we later learned was due to the Quality reason while discussing with the owner.

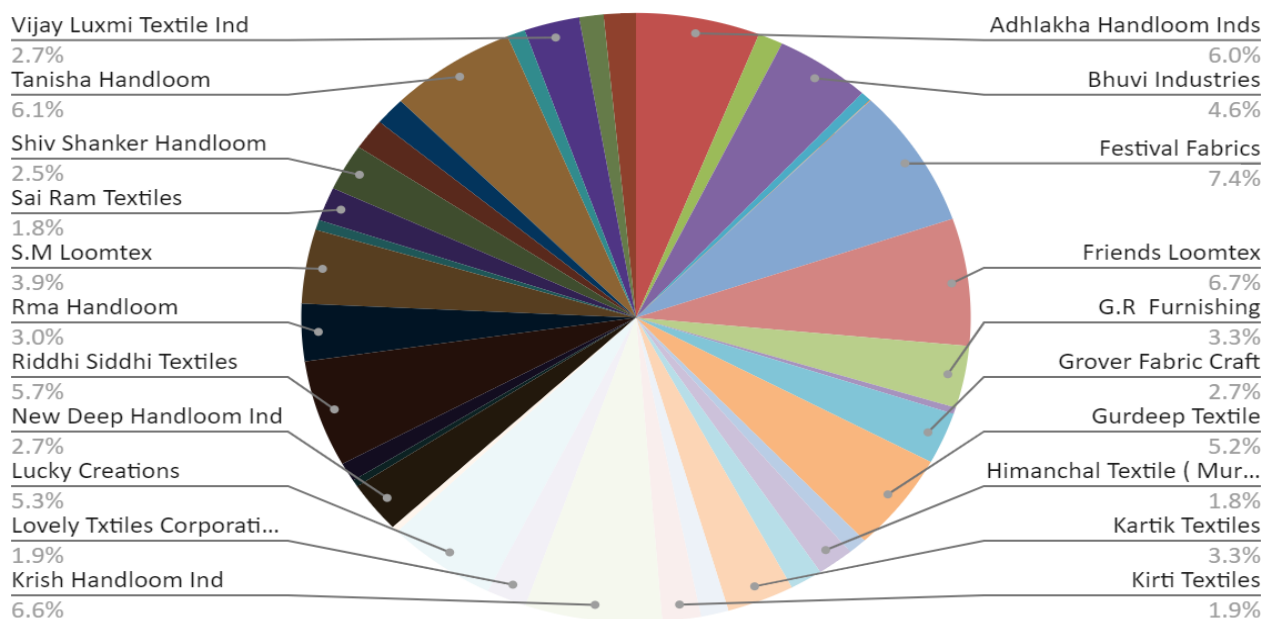


From the chart, we can see that the vendor "A K Agro Foods" has the highest quantity

purchased, followed by "6 Petal Tea Wrapper & Warehouse LLP" and "Sri Shiv Traders (Delhi)". Other vendors have relatively lower quantities purchased. It's also worth noting that some vendors have very low quantities, indicating that they may not be significant suppliers for the company.



### SUM of Gross Total



Based on the chart, we can see that Festival Fabrics has the highest gross total and Adlakha



Handloom. From the chart, we can see that the top three best-selling products are: 250g Tea - with a sales value of over 40 lakhs, 10 rs. Tea - with a sales value of over 12 lakhs and 5 rs. chai - with a sales value of almost 10 lakhs. We can also see that the 20 rs. Tea and 1 kg Tea products have similar sales values of over 10 lakhs each. Interestingly, the 3kg tea product has the lowest sales value of around 1.5 lakhs, indicating that this product may not be very popular among customers. Furthermore, the "others" category has a sales value of around 1.4 lakhs, which is a relatively small portion of the overall sales. However, it is not clear from the data what products are included in this category. Overall, the 250g Tea product seems to be the most popular among customers, followed by the 10 rs. Tea and 5 rs. chai products. This information can be useful for the company to optimize its marketing and sales strategies for these products. Additionally, the low sales value of the 3kg tea product may indicate that the company may want to consider discontinuing or reevaluating this product.

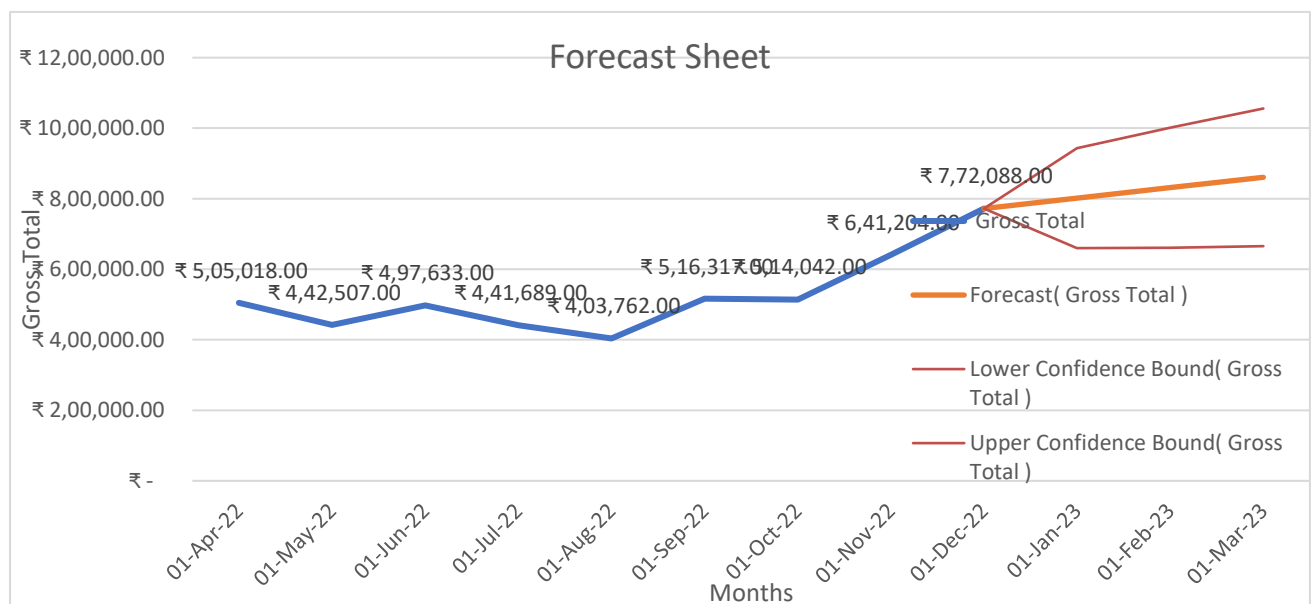
## **Handloom Monthly Sales Forecasting**

We have taken the monthly sales of Handloom Job work from the month of April to December and we predicted the future sales, demand, and price prediction.

Month	Gross Total	Forecast( Gross Total )	Lower Confidence Bound( Gross Total )	Upper Confidence Bound( Gross Total )
01-Apr-22	₹ 5,05,018.00			
01-May-22	₹ 4,42,507.00			
01-Jun-22	₹ 4,97,633.00			
01-Jul-22	₹ 4,41,689.00			
01-Aug-22	₹ 4,03,762.00			
01-Sep-22	₹ 5,16,317.00			
01-Oct-22	₹ 5,14,042.00			
01-Nov-22	₹ 6,41,204.00			
01-Dec-22	₹ 7,72,088.00	₹ 7,72,088.00	₹ 7,72,088.00	₹ 7,72,088.00
01-Jan-23		₹ 8,01,618.28	₹ 6,59,860.33	₹ 9,43,376.24
01-Feb-23		₹ 8,31,148.57	₹ 6,60,698.01	₹ 10,01,599.12
01-Mar-23		₹ 8,60,678.85	₹ 6,65,644.70	₹ 10,55,713.00

- The future forecast data suggests that the Gross Total is expected to increase steadily in the coming months. The forecasted Gross Total for January 2023 is ₹8,01,618.28, which is higher than the Gross Total for December 2022 (₹7,72,088.00). The forecasted Gross Total continues to increase in the following months, with the highest forecasted amount of ₹8,60,678.85 in March 2023.

- The forecast data also provides a range of values for the Lower Confidence Bound and Upper Confidence Bound for each forecasted Gross Total value. These values represent the range of values within which the actual Gross Total is expected to fall with a certain level of confidence. For example, the Lower Confidence Bound for January 2023 is ₹6,59,860.33, which means that there is a 95% chance that the actual Gross Total for that month will be higher than this value. Similarly, the Upper Confidence Bound for March 2023 is ₹10,55,713.00, which means that there is a 95% chance that the actual Gross Total for that month will be lower than this value.
- Overall, the forecasted data suggests that the Gross Total is expected to increase in the coming months, but there is also some uncertainty around these values represented by the confidence bound.



- The forecast sheet shows the predicted values for the Gross Total column for future months, along with the lower and upper confidence bounds for those predictions. The forecast is generated using a statistical model that takes into account the patterns and trends in the historical data.
- For the first eight months, the forecast simply repeats the actual Gross Total values from the data set. For the remaining months (January 2023 to March 2023), the forecast

model predicts the Gross Total based on the patterns observed in the historical data.

## Debtor's Analysis

- As the firm sells its goods on a credit basis, it becomes important to get an insight into the credit repayment period for every debtor. Debtor days were calculated for FY 2021-2022.
- Following formulae were used for calculations: Average credit receivables =  $\sum (\text{debit balance} * \text{number of days outstanding}) / 365$  Debtor days =  $(\text{average credit receivables} / \text{total credit sales}) * 365$
- Debtors with credit repayment periods of more than 6 months (180 days) were singled out and their previous year's repayment records were checked for any similar trend.

Particulars	Closing Balance			Days Pending	Risk Category
	Debit	Today Date	Date		
Himanchal Textile ( Muradnagar )	12,750.00	02-01-2023	25-Dec-22	8	no risk
Desraj Kiryana Store (Samana)	4,41,391.16	02-01-2023	24-Dec-22	9	no risk
Kuber Shri & Sons ( Lucknow )	8,86,992.00	02-01-2023	19-Dec-22	14	no risk
Narula Textile	17,529.00	02-01-2023	18-Dec-22	15	no risk
Vishnu Handloom Factory	27,834.00	02-01-2023	18-Dec-22	15	no risk
A.M Agency ( Bundi )	1,76,602.00	02-01-2023	14-Dec-22	19	no risk
Shree Balaji Fertilizers ( Shahjahanpur )	6,85,926.00	02-01-2023	14-Dec-22	19	no risk
Friends Loomtex	35,863.00	02-01-2023	12-Dec-22	21	no risk
Sachdeva Textiles	24,668.00	02-01-2023	12-Dec-22	21	no risk
Bhuvi Industries	65,709.00	02-01-2023	11-Dec-22	22	no risk

- These are the number of particulars who are below the risk value and have no risk, Based on the given data, it appears to be a list of accounts or customers with their respective closing balances, debit amounts, and other details such as the date of the debit, the current date, and the number of days pending.
- The risk category column suggests that there is some form of risk associated with these accounts. However, as all of the accounts are listed as "no risk," it is not always sure that they are risk-free.
- There are a total of 14 particulars that are incurring some risk we have taken the 40 days as the repayment period while discussing with the owner and here are these which are due in their payments and the owner is taking action accordingly to sort out the payment. The closing amount is also very high for several particulars.

Particulars	Closing Balance			Days Pending	Risk Category
	Debit	Today Date	Date		
Prakash Sweets Store ( Barmer )	3,550.00	02-01-2023	22-11-2022	41.00	risky
Sunder Lal ( Rampur )	13,094.00	02-01-2023	14-11-2022	49.00	risky
Amit Enterprises ( Lucknow )	4,97,632.00	02-01-2023	11-11-2022	52.00	risky
Parthantu Optical and Stationer ( Farrukhabad )	2,53,030.00	02-01-2023	05-11-2022	58.00	risky
B.M Enterprises ( Birbhum )	88,011.00	02-01-2023	04-11-2022	59.00	risky
Jai Baba Lal Traders ( Jammu )	2,24,938.00	02-01-2023	02-11-2022	61.00	risky
Kiran Textiles	21,185.42	02-01-2023	02-10-2022	92.00	risky
U.N Textiles	7,560.00	02-01-2023	02-10-2022	92.00	risky
Parkash & Company ( Himachal Pradesh )	3,70,637.00	02-01-2023	15-09-2022	109.00	risky
Ganesh Handloom	5,750.00	02-01-2023	23-08-2022	132.00	risky
Kesar Trading Co.	1,31,882.00	02-01-2023	27-07-2022	159.00	risky
Seragon Foods ( Saharsa )	18,81,624.00	02-01-2023	25-07-2022	161.00	risky
Bhavya Traders ( Howrah )	4,49,067.00	02-01-2023	09-06-2022	207.00	risky
Namami Agency ( Lakhisarai )	90,389.00	02-01-2023	09-06-2022	207.00	risky

## Results and Findings:

### Inventory Management System:

In the business world, it's important to understand the value of your product and how it relates to your inventory and revenue. However, it's also crucial to monitor the difference between these two factors from month to month, as fluctuations can have a significant impact on your bottom line.

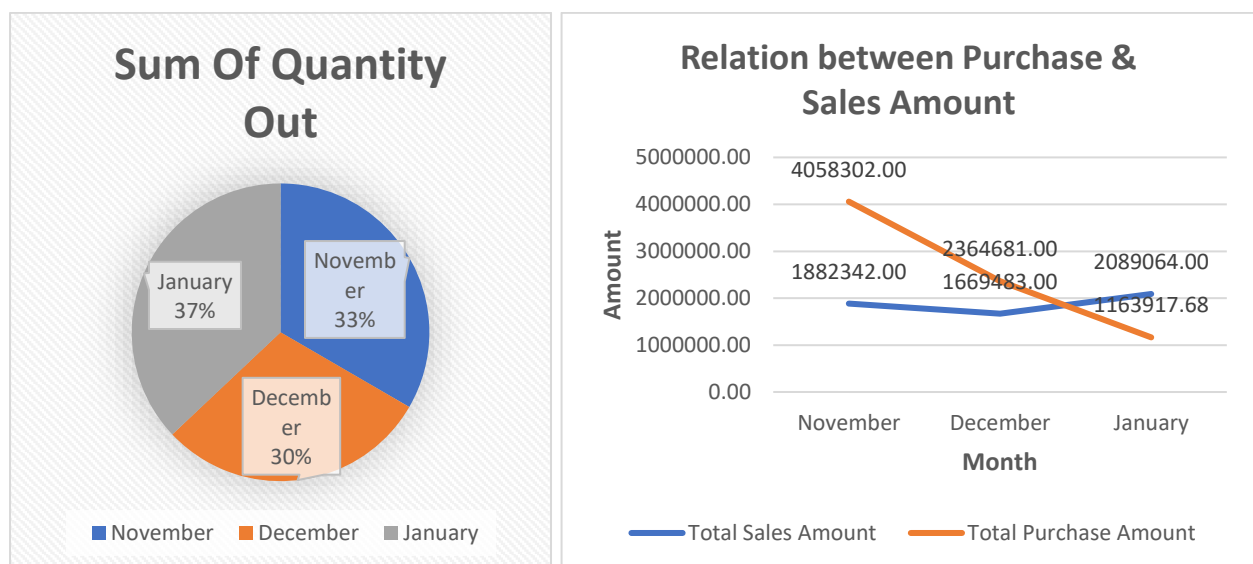
For example, take the tea sales data to let's say that in the months of December and January, you noticed that the value of your sales qty in inventory remained relatively increased, but the purchase qty generated decreased significantly. In this scenario, it would be wise to optimize your inventory levels based on market demand to ensure that you're cost-effectively using your capital.

Date	sales qty	Purchase qty	Gross total	Date	Total Sales Amount	Total Purchase Amount
November	16554.00	27994.90	1882342.00	November	1882342.00	4058302.00
December	15674.00	25076.50	1669483.00	December	1669483.00	2364681.00
January	18364.00	5730.50	2089064.00	January	2089064.00	1163917.68

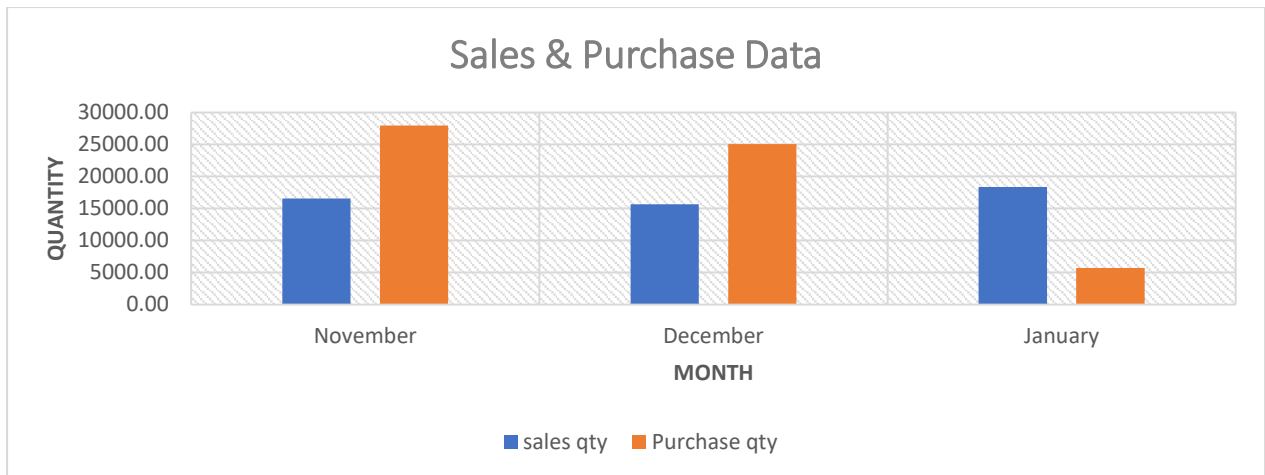
- **Sales Quantity:** The sales quantity shows how much product was sold in a particular month. Based on the given data, we can see that the sales quantity was highest in January (18,364 units) and lowest in December (15,674 units). This indicates that sales have increased in January compared to November and December.
- **Purchase Quantity:** The purchase quantity shows how much product was purchased in

a particular month. Based on the given data, we can see that the purchased quantity was highest in November (27,994.90 units) and lowest in January (5,730.50 units). This indicates that the company purchased more products in November compared to December and January.

- **Sales vs Purchase:** By comparing the sales and purchase quantities, we can see that the company sold more products in January (18,364 units) than it purchased (5,730.50 units). This suggests that the company may have lower inventory levels in January, and this could have implications for its operations, supply chain, and financials.
- Overall, this data suggests that the company's sales have increased in January compared to November and December, but its purchase quantities have decreased. The company may need to evaluate its inventory management practices and ensure that it has adequate inventory levels to meet customer demand in the future.

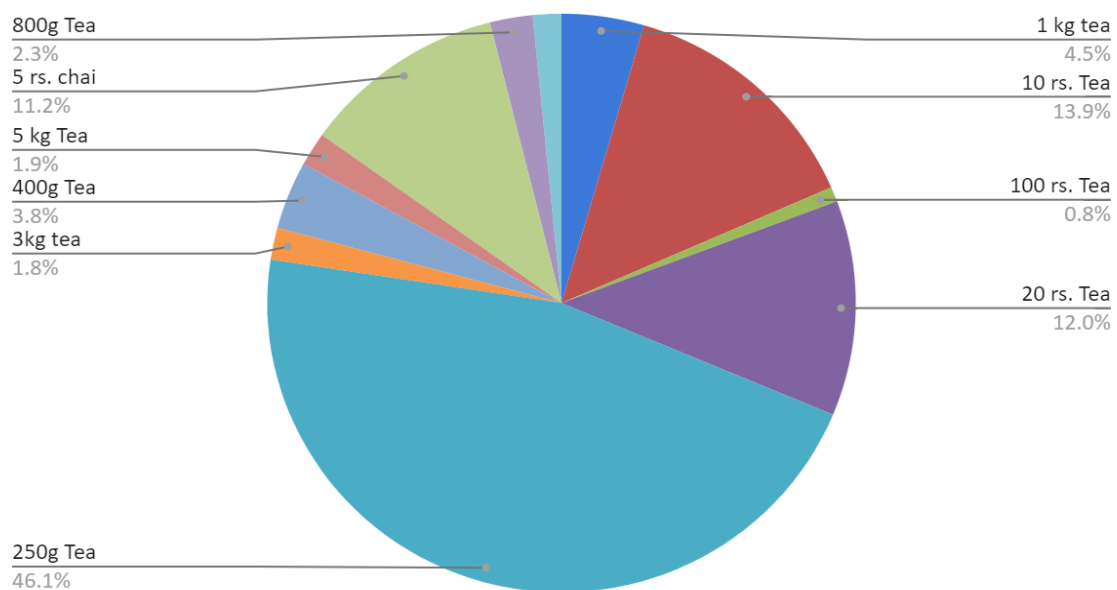


- Looking at the chart, we can see that there is a clear difference in the trend between total sales and total purchase amount. Total sales show an increasing trend from November to January, with a peak in January. On the other hand, the total purchase amount shows a decreasing trend from November to December and then increases in January.
- This suggests that there may be some seasonal or cyclical patterns in the data that are affecting the sales and purchase amounts. It also highlights the importance of analyzing both variables together to gain a more complete understanding of the overall business performance.



- By doing so, you'll be able to not only optimize your inventory levels but also generate more revenue and improve your bottom line. This approach will enable you to use your capital more efficiently and ensure that you're investing in areas that are most likely to yield positive results.
- Overall, it's essential to remain vigilant and adapt to changing market conditions to ensure that your business stays competitive and continues to grow. By closely monitoring your inventory and revenue, and optimizing your strategies accordingly, you'll be better equipped to achieve your business objectives and drive long-term success.

### Contribution of Tea SKUs in Sales

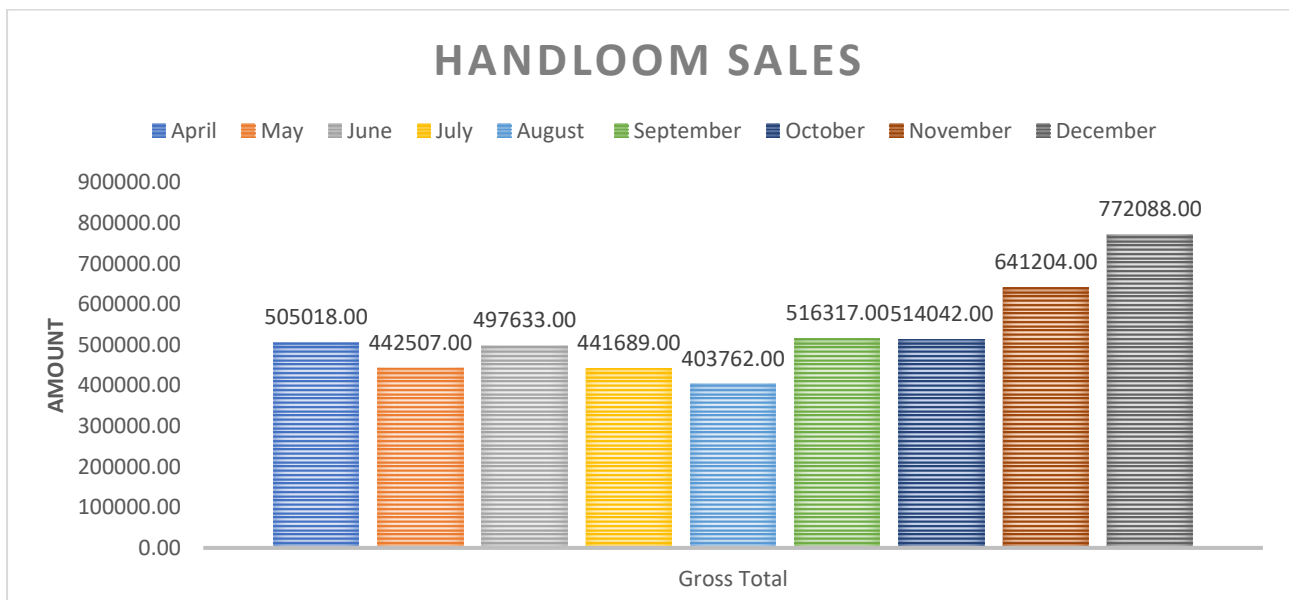


- From the given data, we can see that tea products have contributed significantly

to sales. The total sales amount for tea products is 9,186,466.27, which is almost 95% of the total sales.

- In terms of SKUs, the best SKU is "250g Tea" with a sales value of 4,068,390.69, followed by "10 rs. Tea" with a sales value of 1,228,953.72, and "5 rs. chai" with a sales value of 990,294.26. These three SKUs account for more than 80% of the total tea sales.
- The worst-performing SKUs are "100 rs. Tea" with a sales value of only 73,143.48 and "3kg tea" with a sales value of 157,394.7.
- Overall, it seems like the company should focus on the best-performing SKUs to maximize their sales potential.

### **Handloom Monthly sales graph**



The month-over-month comparison refers to the analysis of changes in a given variable (in this case, Gross Total) from one month to the next. It can help identify trends, patterns, and seasonality in the data.

- Looking at the data provided, we can see that there is some seasonality to the Gross Total figures. For example, the Gross Total figures tend to be higher in the latter half of the year, with November and December being the highest. This could be due to increased holiday spending or other seasonal factors.
- Additionally, we can see that there is some fluctuation in the Gross Total figures from month to month. For example, there is a dip from June to July, followed by a

further decrease in August. This could be due to a variety of factors, such as changes in consumer behavior, economic conditions, or other external factors.

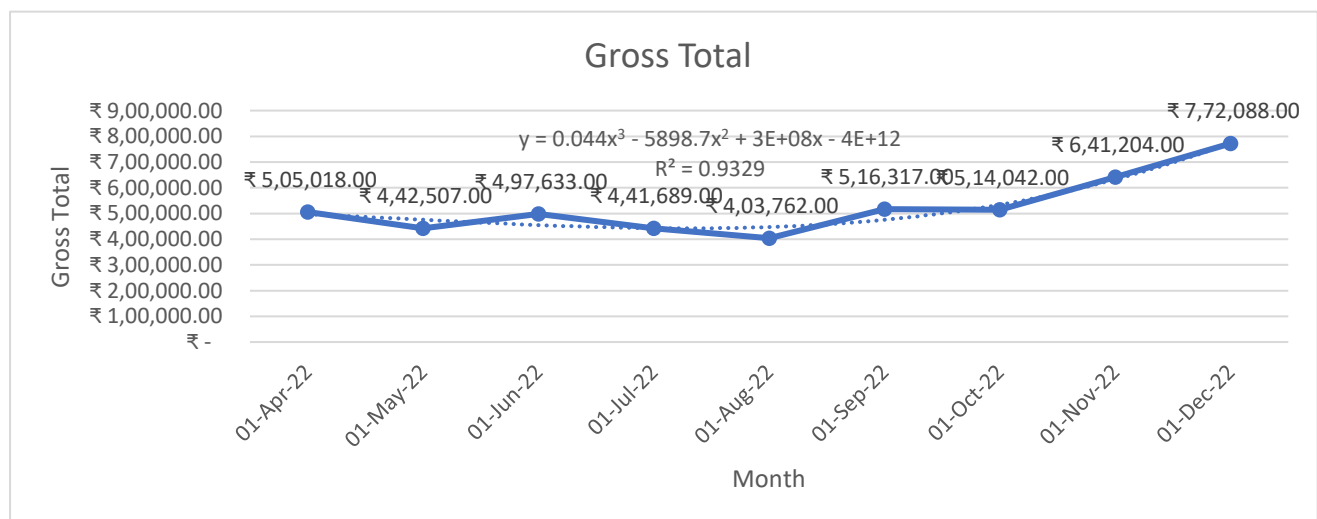
- Overall, month-over-month comparison and seasonality analysis can provide valuable insights into patterns and trends in the data.

## Correlation Between Monthly sales quantity and Revenue of a product

The correlation matrix shows the relationship between the two variables: Value (revenue) and Quantity sold. A correlation coefficient is a statistical measure that indicates the extent to which two variables are related.

In this case, the correlation coefficient between the two variables is 0.9329, which is a strong positive correlation. This means that there is a strong relationship between the quantity sold and the revenue generated.

Correlation Matrix		
	Value	Quantity
Value	1	0.9329
Quantity	0.9329	1



This can be interpreted as an increase in the quantity sold, which leads to an increase in the revenue generated. Conversely, a decrease in the quantity sold will lead to a decrease in the revenue generated. The strong correlation suggests that the sales revenue is highly dependent



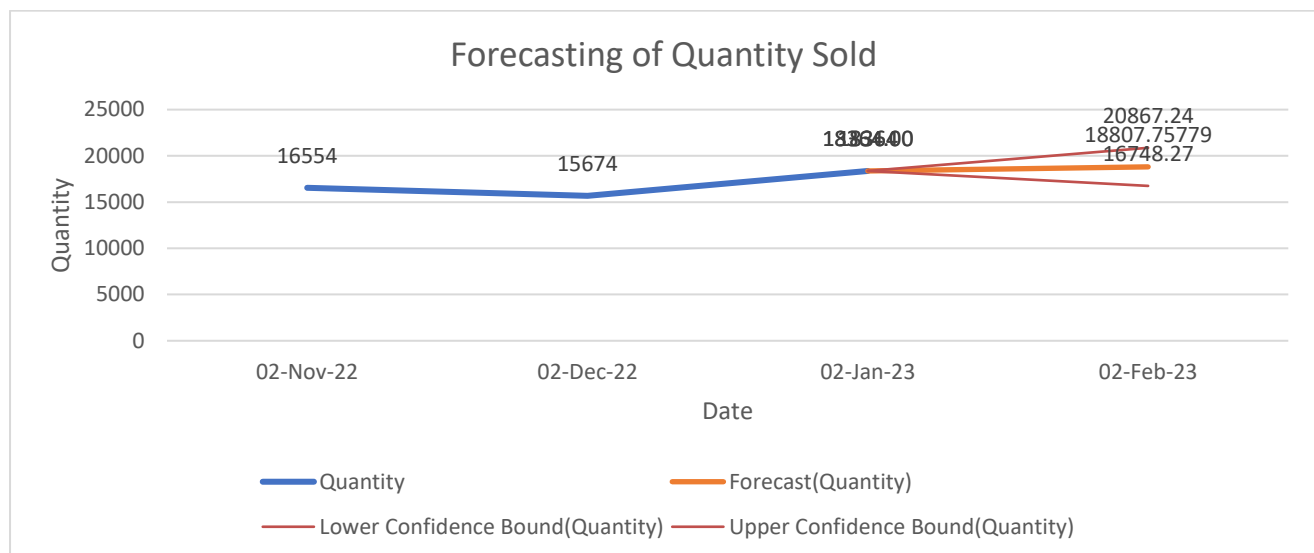
on the quantity sold, and any changes in the quantity sold will have a significant impact on the sales revenue.

## **Forecasting of Monthly Quantity Sold and Gross Total**

This table shows the forecasted Gross total and Quantity sold (i.e., the revenue) for the upcoming months along with the lower and upper confidence bounds.

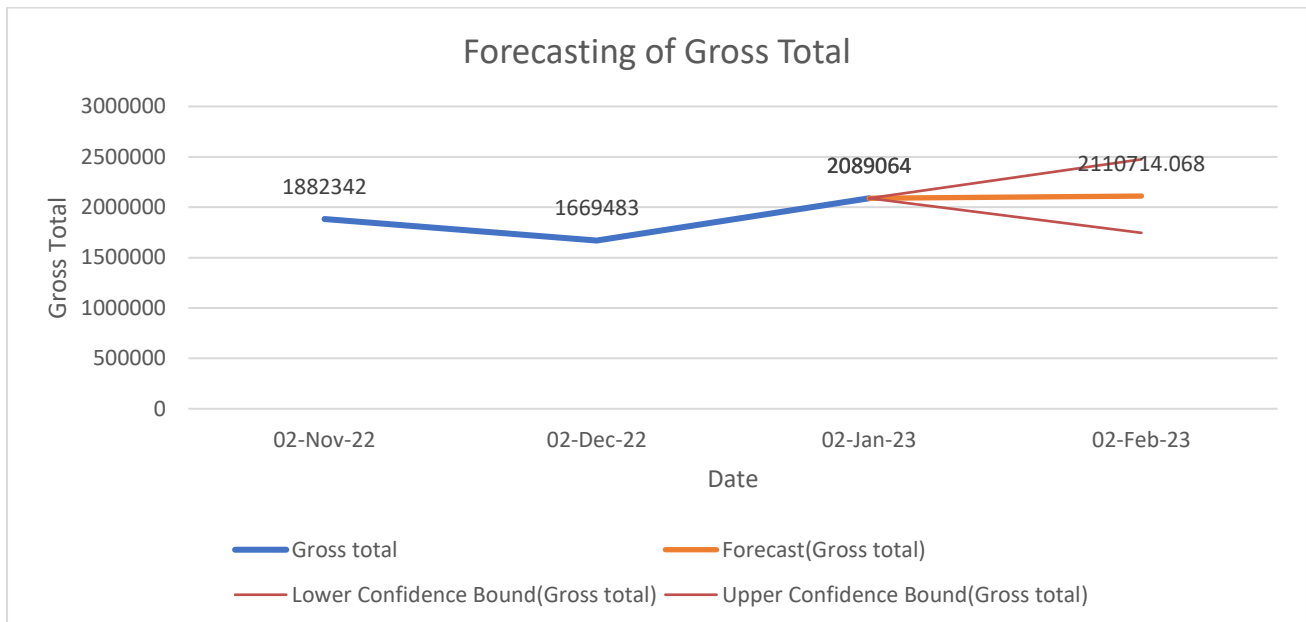
The first two columns show the date and the actual gross total for the previous months. The third column shows the forecasted gross total for the upcoming months, which is generated using a forecasting model. In this case, the model has estimated the gross total for November 2022 and December 2022 as 1,882,342 and 1,669,483 respectively.

Date	Quantity	Forecast(Quantity)	Lower Confidence Bound(Quantity)	Upper Confidence Bound(Quantity)
02-Nov-22	16554			
02-Dec-22	15674			
02-Jan-23	18364	18364	18364.00	18364.00
02-Feb-23		18807.75779	16748.27	20867.24



The fourth and fifth columns show the lower and upper confidence bounds for the forecasted gross total. These bounds represent the range within which the actual value is expected to fall with a certain level of confidence. In this case, the model estimates the gross total for January 2023 to be 2,089,064 with a lower confidence bound of 2,089,064 and an upper confidence bound of 2,089,064. For February 2023, the model estimates the gross total to be 2,110,714.068 with a lower confidence bound of 1,745,867.60 and an upper confidence bound of 2,475,560.5. The fourth and fifth columns show the lower and upper confidence bounds for the forecasted quantity of the item that will be sold on the corresponding date. These bounds provide an estimate of the range within which the actual quantity sold is likely to fall.

Date	Gross total	Forecast(Gross total)	Lower Confidence Bound(Gross total)	Upper Confidence Bound(Gross total)
02-Nov-22	1882342			
02-Dec-22	1669483			
02-Jan-23	2089064	2089064	2089064.00	2089064.00
02-Feb-23		2110714.068	1745867.60	2475560.53



For example, according to this table, on January 2, 2023, 18,364 units of the item were sold and the forecasted quantity of the item sold on that date is also 18,364 units. The lower and upper confidence bounds for this forecast are also 18,364 units.

Similarly, on February 2, 2023, the forecasted quantity of the item sold is 18,808 units, with lower and upper confidence bounds of 16,748.27 and 20,867.24 units, respectively. The actual quantity sold on that date is not yet known.

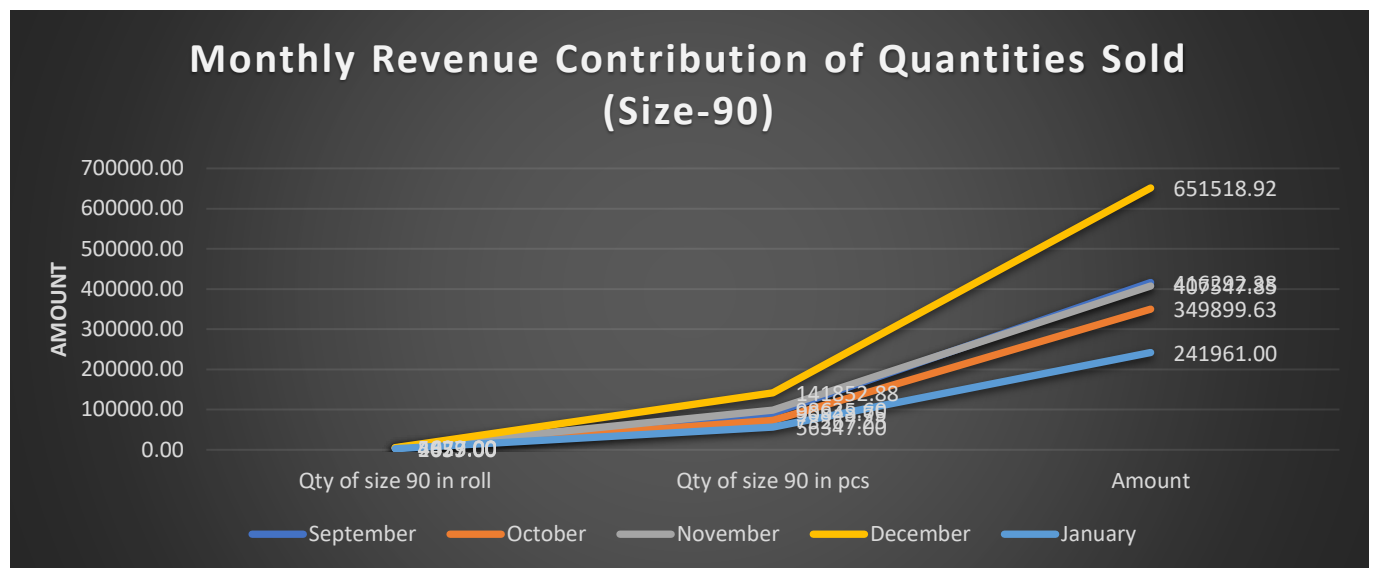
## **Revenue Contribution of goods Produced in Handloom Job Work**

The given data shows the quantities and amounts of size 90&60 rolls and pieces sold for each month from September to January.

In September, the company sold 4673 size 90 rolls, which translates to 90848.75 sizes 90 pieces, generating a revenue of 416292.38. In September, the company sold 12282 size 60 rolls, which translates to 13992.75 sizes 60 pieces, generating a revenue of 1019931.10. This was the highest revenue generated by any month in the given data.

In October, the quantity of size 90 rolls sold decreased to 4027, and the quantity of size 90 pieces sold decreased to 73267.25, resulting in a revenue of 349899.63. In October, the quantity of size 60 rolls sold decreased to 9266, but the quantity of size 60 pieces sold increased

to 289145.75, resulting in a revenue of 843552.85.



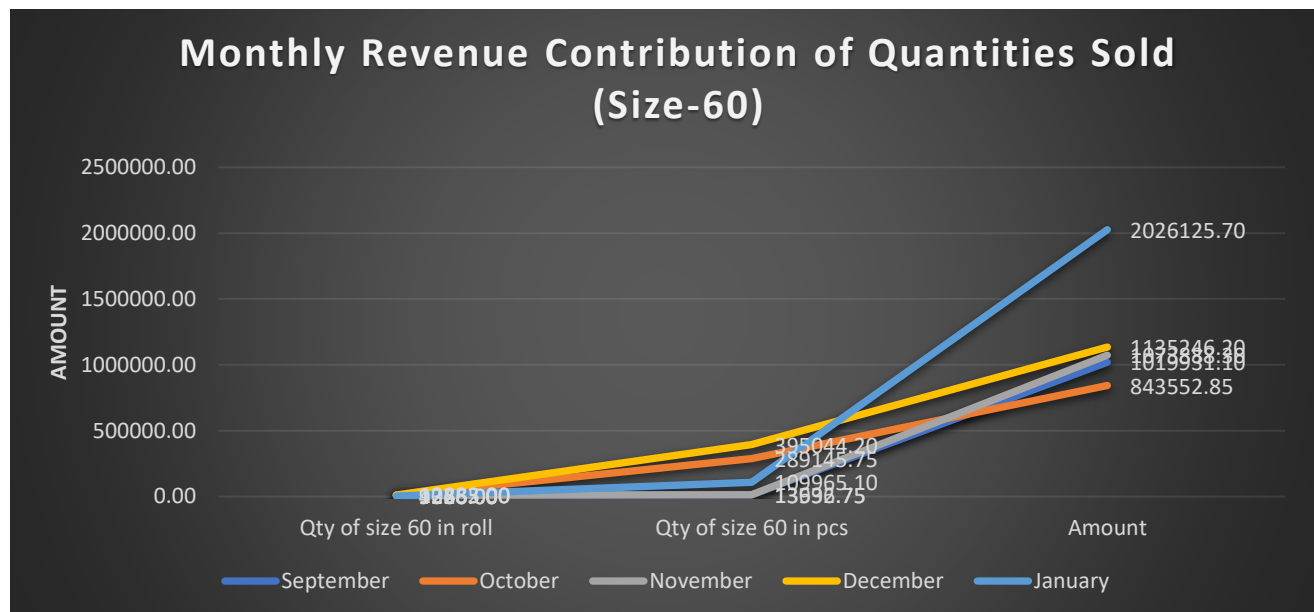
In November, the quantity of size 90 rolls sold increased to 4633, and the quantity of size 90 pieces sold increased to 98635.60, generating a revenue of 407547.85. In November, the quantity of size 60 rolls sold increased to 10883, but the quantity of size 60 pieces sold decreased to 13636.75, generating revenue of 1073888.30.

In December, the quantity of size 90 rolls sold increased to 5437, and the quantity of size 90 pieces sold increased to 141852.88, generating a revenue of 651518.92. In December, the quantity of size 60 rolls sold increased to 12435, and the quantity of size 60 pieces sold increased to 395044.20, generating a revenue of 1135246.20

In January, the quantity of size 90 rolls sold decreased to 2659, and the quantity of size 90 pieces sold decreased to 56347.00, resulting in a revenue of 241961.00. In January, the quantity of size 60 rolls sold decreased to 4326, and the quantity of size 60 pieces sold decreased to 109965.10, but the revenue generated was the highest among all the months at 2026125.70.

Overall, the monthly revenue contribution was primarily driven by the quantity of size 90 pieces sold, with December being the highest revenue-generating month due to the highest quantity of size 90 pieces sold. However, the revenue generated in September and November was also relatively high, indicating a consistent demand for this product. It is also worth noting that the revenue generated in January was the lowest among all the months, suggesting possible seasonal fluctuation in demand for this product. Overall, the monthly revenue contribution was primarily driven by the quantity of size 60 pieces sold, with September being the highest revenue-generating month due to the highest quantity of size 60 rolls sold. However, the

revenue generated in January was the highest among all the months despite a decrease in the quantities sold, indicating a higher selling price or profit margin for that month.



## Debtor's Analysis:

Particulars	Closing Balance			Days Pending	Category
	Debit	Today Date	Date		
U.N Textiles	7560.00	02-01-2023	02-10-2022	92	Risky
Kiran Textiles	21185.42	02-01-2023	02-10-2022	92	Risky
Parkash & Company ( Himachal Pradesh )	370637.00	02-01-2023	15-09-2022	109	Risky
Ganesh Handloom	5750.00	02-01-2023	23-08-2022	132	Risky
Kesar Trading Co.	131882.00	02-01-2023	27-07-2022	159	Risky
Seragon Foods ( Saharsa )	1881624.00	02-01-2023	25-07-2022	161	Risky
Namami Agency ( Lakhisarai )	90389.00	02-01-2023	09-06-2022	207	Risky
Bhavya Traders ( Howrah )	449067.00	02-01-2023	09-06-2022	207	Risky

The firm is aware of some of the lousy debtors and has taken action against them. Thus, those debtors are not included in the table. Trades have been stopped with 8 debtors with a bad history of repayments, namely U.N Textiles, Kiran Textiles, Prakash & Company, Ganesh Handloom, Kesar Trading Co., Seragon Foods, Namami Agency, and Bhavya Traders. Recovery from these clients seems doubtful. The firm should make a provision for these bad debts. It is advised to the firm to stop any trades with them in the next year unless they pay back first. The remaining 7 debtors are observed to have good track scores for repaying their dues. Debtors like Gayatri Kesar Trading Co. and Seragan Foods are flagged in the very risky category as the amount category by them crosses over Rs. 1 lac. It is recommended that the firm terminates its transaction with them until the debtors return at least 50% of the money owed. Another recommendation to the firm would be, to have a credit limit system for giving

credits to the risky and very risky category clients such that we don't lose our client base and our inventory outflow doesn't stop. The firm could give a certain percentage of the amount repaid as a credit to the clients. For example, If a client repays Rs. 1 lac, the firm will allow credit up to Rs. 50k to the client. For debtors in the risky category, the firm can reduce the credit amount given to the client as we would want to have a good client base with high transaction value and less credit repayment period.

## **Interpretations of Result and Recommendations:**

Here are some suggestions for managing inventory and controlling it based on sales and demand while using capital effectively:

- ***Ageing of debtors:*** This analysis helps to identify the amount of debt outstanding at different stages of aging, such as 30 days, 60 days, 90 days, or more. Based on this analysis, the business can identify the customers who are taking longer to pay and take appropriate actions such as sending reminders and offering incentives or penalties.
- ***Credit terms analysis:*** This analysis helps to identify the customers who are not adhering to the credit terms offered by the business. Based on this analysis, the business can identify the customers who are a credit risk and take actions such as reducing credit limits, offering shorter credit terms, or asking for security deposits.
- ***Collection efficiency analysis:*** This analysis helps to measure the effectiveness of the credit control and debt collection procedures of the business. Based on this analysis, the business can identify areas of improvement, such as improving the credit application process, automating the invoicing process, or improving the debt collection procedures.
- ***Customer segmentation:*** Debtors analysis can help to segment customers based on their creditworthiness, payment history, and purchasing behavior. Based on this analysis, the business can develop targeted credit policies, such as offering credit insurance or reducing credit limits for high-risk customers.
- ***Price Prediction for Handloom Business:*** Based on historical data and market trends, the price of handloom products is expected to increase in the next few months. It is recommended to conduct regular market research and competitor analysis to stay up-to-date on market trends and adjust prices accordingly.

- The *price elasticity of demand* for handloom products should be considered when setting prices to ensure that they are not too high, which could result in a decrease in demand.
- *Demand Forecasting for Tea Business*: Based on historical data and seasonal trends, demand for tea is expected to increase in the upcoming months.
- It is *recommended to maintain an adequate inventory* of tea products to meet the expected increase in demand.
- Promotional campaigns and discounts can be used to stimulate demand during the off-season to help balance the fluctuation in demand. Market research can be used to *identify new market segments and expand the customer base*.
- *Analysis of revenue contribution of quantity sold* refers to the process of examining the impact of the number of goods sold on a company's revenue. This analysis helps businesses understand how changes in quantity sold can affect their financial performance.
- The results of this analysis *depend on the specific business and industry* being analyzed. However, in general, businesses typically find that the quantity sold has a positive correlation with revenue. That is, as the number of goods sold increases, revenue also increases, assuming all other factors remain constant.
- This analysis can *provide valuable insights into a business's operations* and help them make informed decisions. For example, if a company is not meeting its revenue goals, it may want to explore ways to increase the number of goods sold, such as expanding its customer base or improving its marketing efforts.
- Based on the results of this analysis, recommendations may include *adjusting pricing strategies, investing in marketing campaigns, or identifying new markets to target*. By focusing on increasing the number of goods sold, businesses can increase their revenue and improve their overall financial performance.
- Set up policies for ordering, receiving, storing, and tracking inventory. Having these policies in place will *help in ensuring that inventory is managed efficiently and effectively*. Use promotions and discounts to encourage customers to purchase slow-moving SKU