COURSE PROJECT – BUSINESS INTELLIGENCE

MADLI STYLES
BE A LIMELIGHT IN PUBLIC!

Submitted by: Tuba Nasir

ERP: 18620

Dataset: This is the dataset of a recent E-commerce start-up Madli Styles.
Excel sheet of dataset is attached (Both raw and transformed)

Problem Statements:

1. How does the sale of products vary according to their types, cities, and popularity.

2. How has been the performance of Madli Styles in terms of COD, orders received, and margins of the company since the time it was launched.

Wrangling:

The data obtained was raw from a recent startup, so a lot of cleaning was needed.

- *Order Ref & Cost Centre* - Remove Order Ref & Cost Centre column since it only contains the name of the company.
- *Dispatching date* - Almost the whole dispatching date is empty so replace it using TCS Shipping Charges Sheet. Common column in TCS And TCS Shipping Charges are the same so using VLOOKUP, dispatching dates were mapped from the TCS sheet to TCS Shipping Charges Sheet.

  =IFERROR(VLOOKUP(B2,' TCS Shipping Charges'!B3:L173,3,0), "N/A")-

- *Label Dates* - Some label dates were blank so were replaced with N/A
- *Origin* - All columns are Karachi so removed this column
- *Name, Address, City* -The name, address, and contact columns were deleted because they would not add any meaningful insights into our analysis.
- *COD, Product* - 3 rows in COD and Product were blank so removed them.
- *Product* - Renamed Product as product Price
- *Overnigh*t – column removed as it only had overnight as a data value
- *Weights* – almost all values were 0.5, and a few blanks and two anomalies of 500 were found so the column was removed as it did not add any meaningful insights into our data.
- *Product details, trousers* - Product details and Trousers only had a few rows, so they were incorporated into Remarks and then deleted.
- *Remarks* - There were multiple variations for a product name in the Remarks column, so they were changed.
- *Remarks* - Remarks had the format [ProductName]([Quantity]).
  Name extracted using the following query:

  =IFERROR((LEFT(K2,FIND("(",K2)-1)),"N/A")

  Quantity extracted using the following query:

  =IFERROR(MID(K2, SEARCH("(",K2) + 1, 1), 1)

- *No. of Pieces* – column deleted since all had the value 1

- <u>*Status*</u> – the values in this column are continuously changing according to the order of our status

Analysis

Strategy:

We will start by getting an overview of the business by counting the number of products concerning their type and city. This will give us an idea of the most sold product and the cities from which we get most of the orders. After getting a general idea, we will explore these areas further. Taking the top three cities, we will analyze what are the most sold products in each city and study the result.

Moving on, we will analyze our orders with respect to the Cash on Delivery column. We will see try to decipher the range and common CODs values and see if there is a pattern. Next, trends will be analyzed with respect to the number of orders received and see how that have varied since the company was launched.

As the next step of our analysis, we will figure out the months in which the most sold products performed the best. And finally moving on, we will see the margin and determine what factors contributed to it.

STEP 1: Excel file Background.Data.Knowledge filled.

STEP 2: Hand-drawn charts

(*Next Page*)

Q.1) Determine and analyze the number of products sold by product type and city.
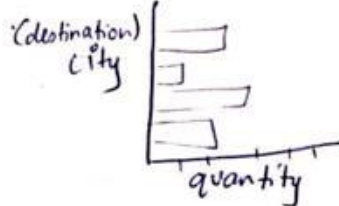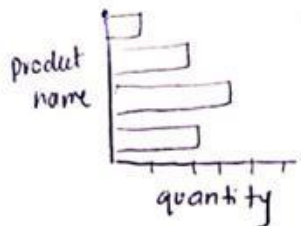
x-axis: sum(quantity)   : x-axis : sum(quantity)
y-axis : product name   : y-axis , product name
chart : bar chart (horizontal) : chart : barchart.

Product name
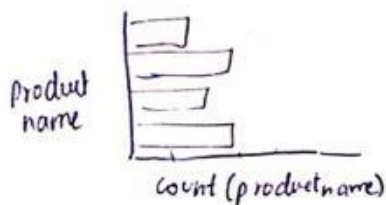
quantity

(destination) city

quantity

Q.2) Draw a comparision of the most sold products in the major cities of Pakistan.

For each major city, g'll draw a bar chart
x-axis : count of product name
y-axis : product name.

Product name

count (product name)

The reason
9 first made pie chart but couldnot compare the differences of b/w the cities so shifted to bar chart which helped me with the analysis

Q.3) Compare the sales of the two most popular products over the period and discuss any findings.

x-axis : dispatching date
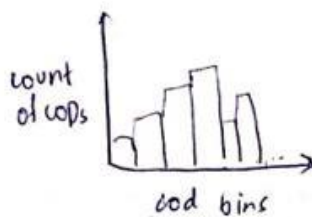y-axis : count of product name
chart : line chart
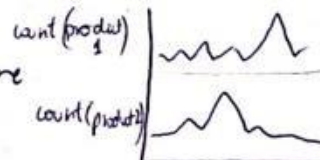
count (prodw)

count(prdt)

Dispatching date.

An Q.4) Analyse the cost of orders recieved at the company and the amount that people usually prefer paying for a single order.

x-axis : divide CODs into bins

y-axis : coud of CODs

chart : bar chart

count of CODs

cod bins

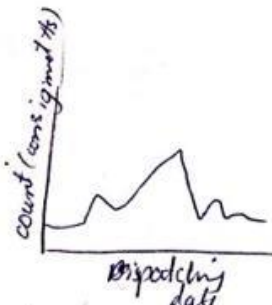Q.5) Discuss the performance of the company in terms of orders recieved and margins over the period. Are there any patterns or insights discoverd? Discuss any, if found.
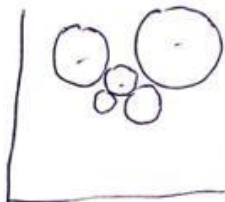
x-axis : dispatching date
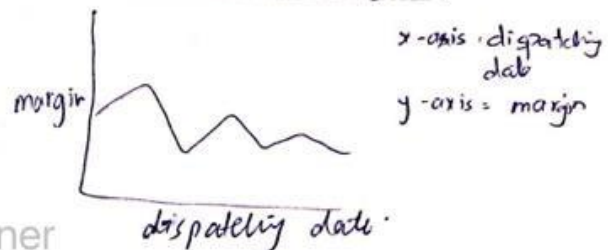y-axis : count of consignment #
chart : line chart

Then, First calculate margin using sum[COD] - sum[Product price]

% bubble chart for margin :

line chart for margin :

margin

x-axis : dispatching date
y-axis : margin

dispatching date.

STEP 3: Story plan

Step 3 :

~~Ass~~
Stories :-

- First I analysed the quantity of product sold by type and city in Q1 so I will made a dashboard of that chart and add it to the story (can include as individual ~~stories~~ sheets too).

- Next, after analysing the most sold products in the major cities of Pakistan in the charts in question 2, I will add that to my story as well.

- After that, for Q.3, I will make a sheet for the analysis of the sales of the top products overtime. I will add that as the next slide in my story.

- To analyze the cost of orders recieved at the company, we will draw a bar chart ~~and~~ in a sheet and that will be the next slide in my story.

- For Q5, a line chart for total number of orders will be made in a sheet. That sheet will be added to the story. Moving on, for margin analysis, the bubble chart & line chart will be made on seperate sheet and will then be added to a dashboard. This dashboard will be the next slide in the story.

- Lastly, ~~we I will~~ will display the final insights and conclusions in the last slide.
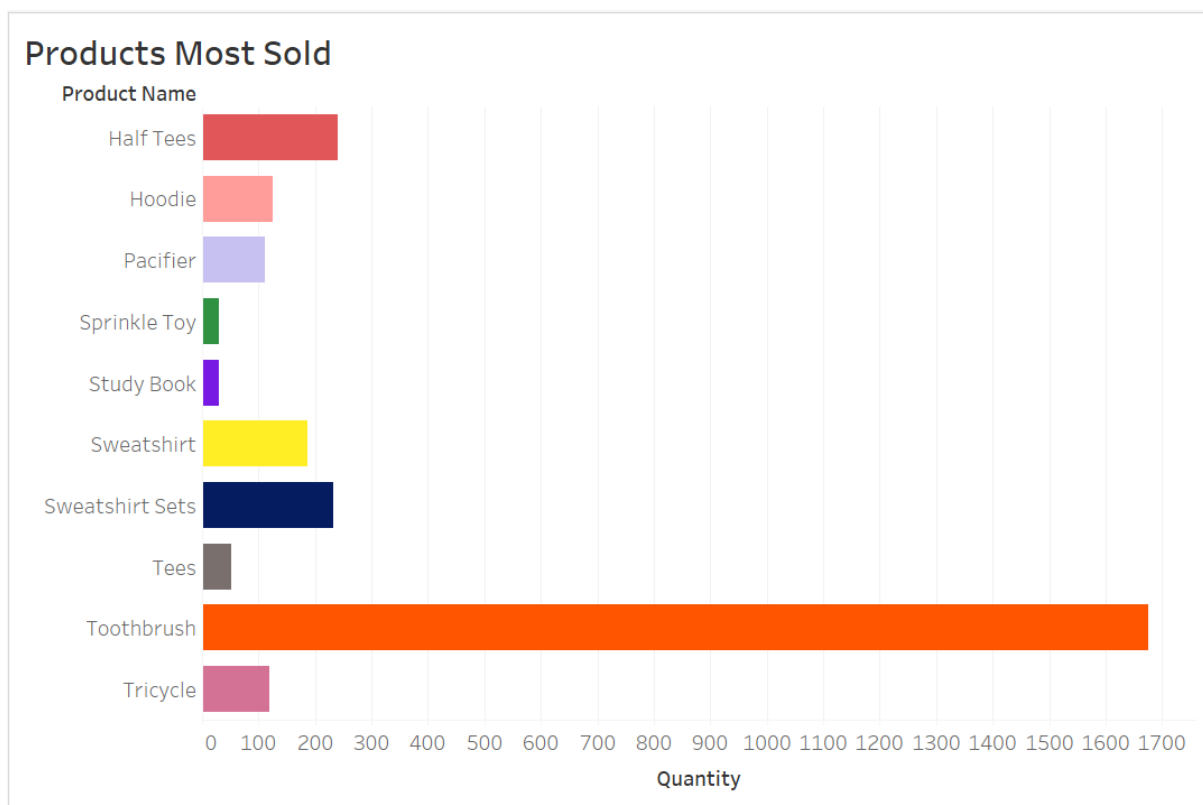
STEP 4: Sheets – done in tableau

STEP 5: Dashboards – done in Tableau

**STEP 6**: Stories – done in Tableau

STEP 7: Answer BI Queries – below

Q1) Determine and analyze the number of products sold by product type and city.

From the above bar graph, we can deduce that Toothbrushes leads by a huge margin with almost 1700 units being sold. The rest of the products do not exceed the 250-unit mark. The second highest is half-tees followed by Sweatshirt Sets.
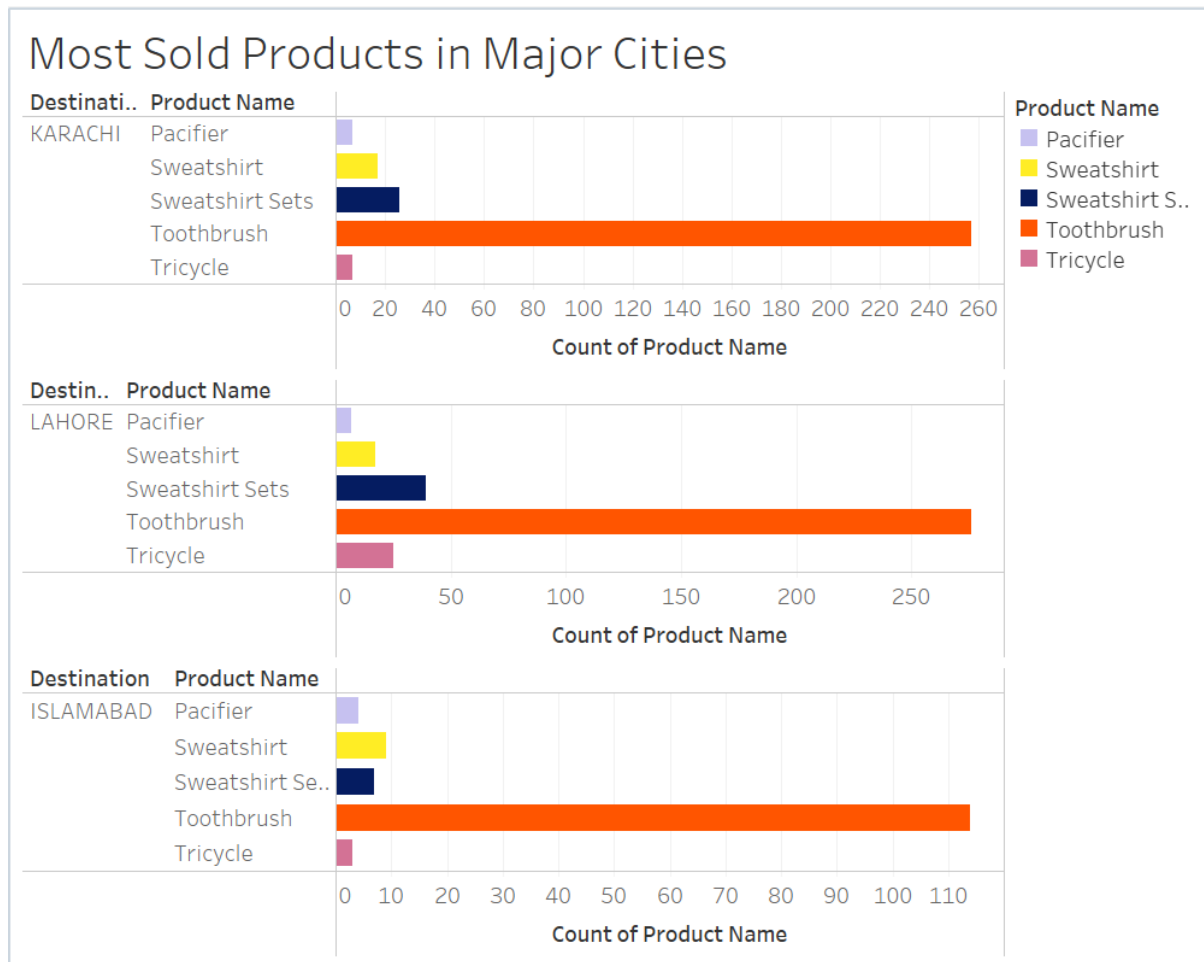
Cities with Most Orders

Destination
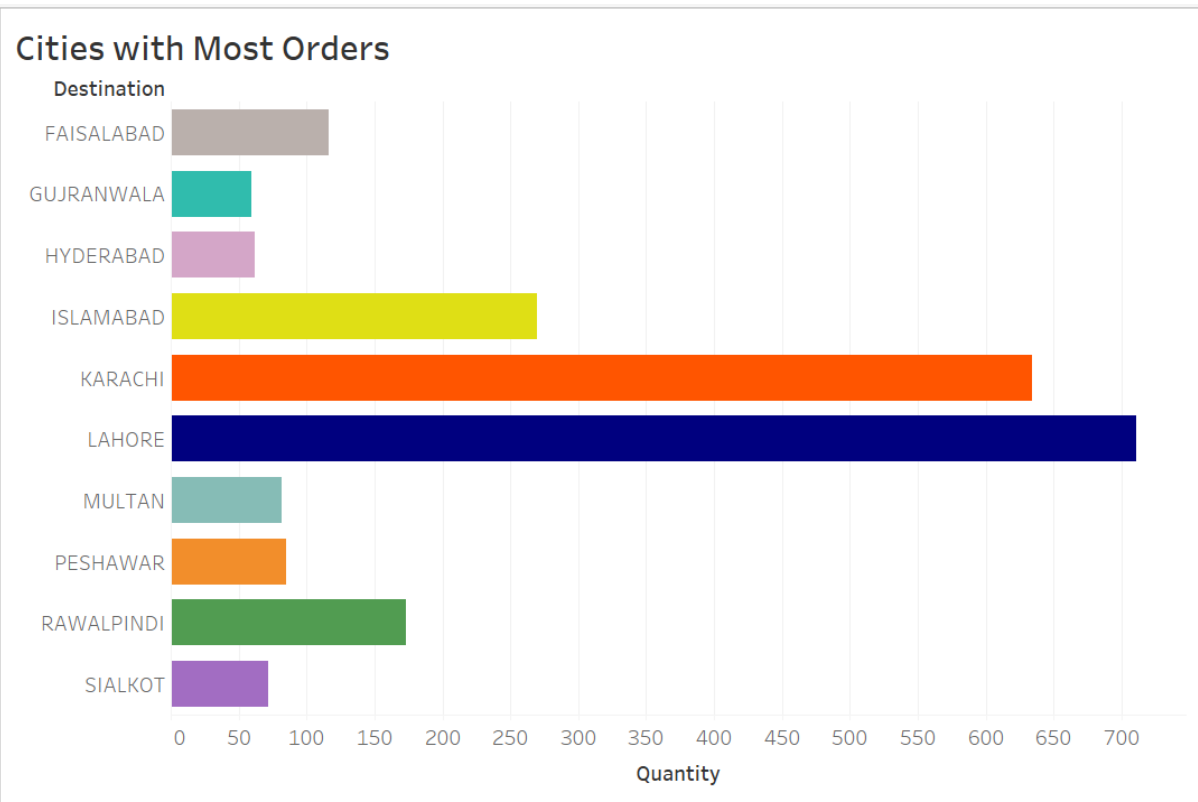
This bar graph tells us that Madli Styles received most of their orders from Lahore which amounts to 700 in total. This was followed closely by Karachi and then Islamabad. Orders from Islamabad were almost half of the number of orders from Karachi.

Q2) Draw a comparison of the most sold products in the major cities of Pakistan.

Most Sold Products in Major Cities

Destinati..	Product Name	
KARACHI	Pacifier	
	Sweatshirt	
	Sweatshirt Sets	
	Toothbrush	
	Tricycle	

0 20 40 60 80 100 120 140 160 180 200 220 240 260
Count of Product Name

Destin..	Product Name	
LAHORE	Pacifier	
	Sweatshirt	
	Sweatshirt Sets	
	Toothbrush	
	Tricycle	

0   50   100   150   200   250
Count of Product Name

Destination	Product Name	
ISLAMABAD	Pacifier	
	Sweatshirt	
	Sweatshirt Se..	
	Toothbrush	
	Tricycle	

0   10   20   30   40   50   60   70   80   90   100 110
Count of Product Name

Product Name
- Pacifier
- Sweatshirt
- Sweatshirt S..
- Toothbrush
- Tricycle

The trend observed is mostly the same with toothbrushes leading in all cities except that the number of Sweatshirts bought is higher than Sweatshirt Sets for Islamabad as compared to Karachi and Lahore. Also, Lahore leads by a relatively high margin in the purchase of Tricycles at 27 as compared to the other two cities.

Q3) Compare the sales of the two most popular products over the period and discuss any findings.

## Popular Products Analysis
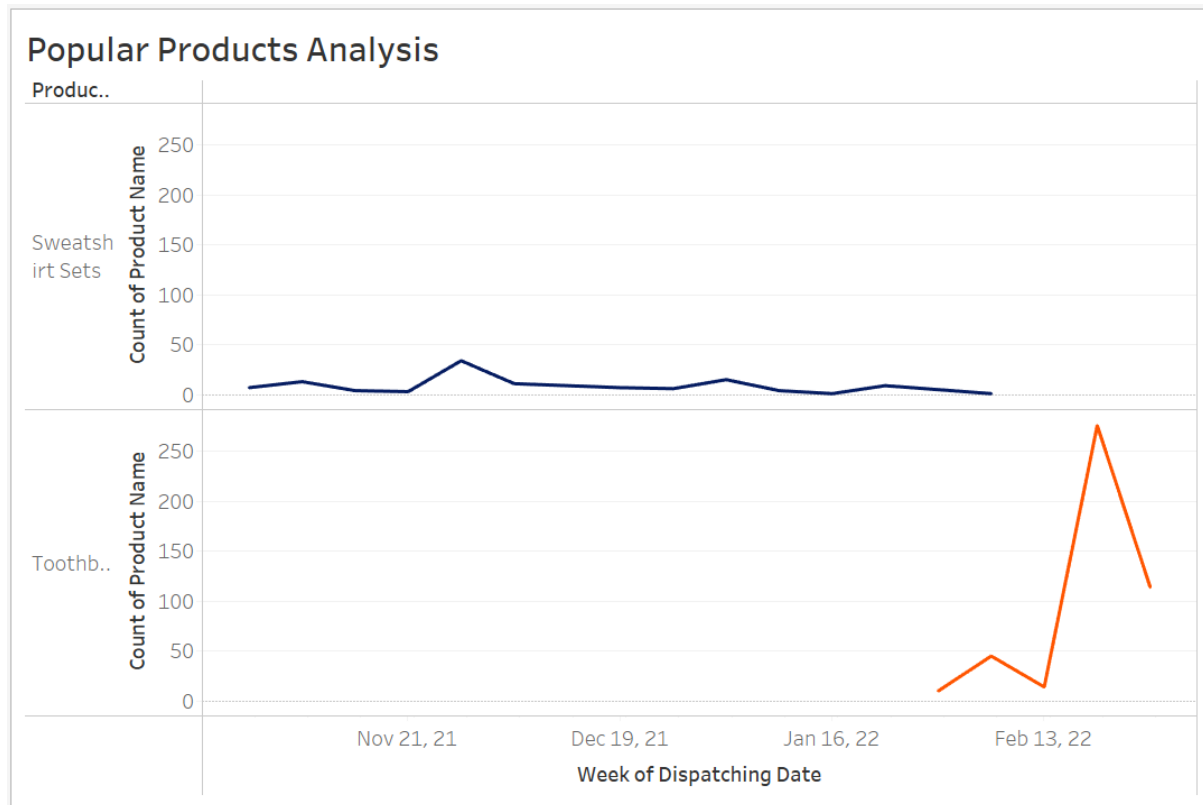
Produc..

The above line graph provides some interesting insights. Sweatshirts were introduced when the company was launched in Oct 2021. Their sales have been almost constant during this period. Their sale stopped in the mid of February when the winter season was no longer at its peak. As for toothbrushes, they were introduced at the start of February and a drastic increase has been observed in the sale of toothbrushes such that it beat the total sales of Sweatshirts in a much shorter period.

Q4) Analyse the cost of orders received at the company and the amount that people usually prefer paying for a single order.

COD Analysis
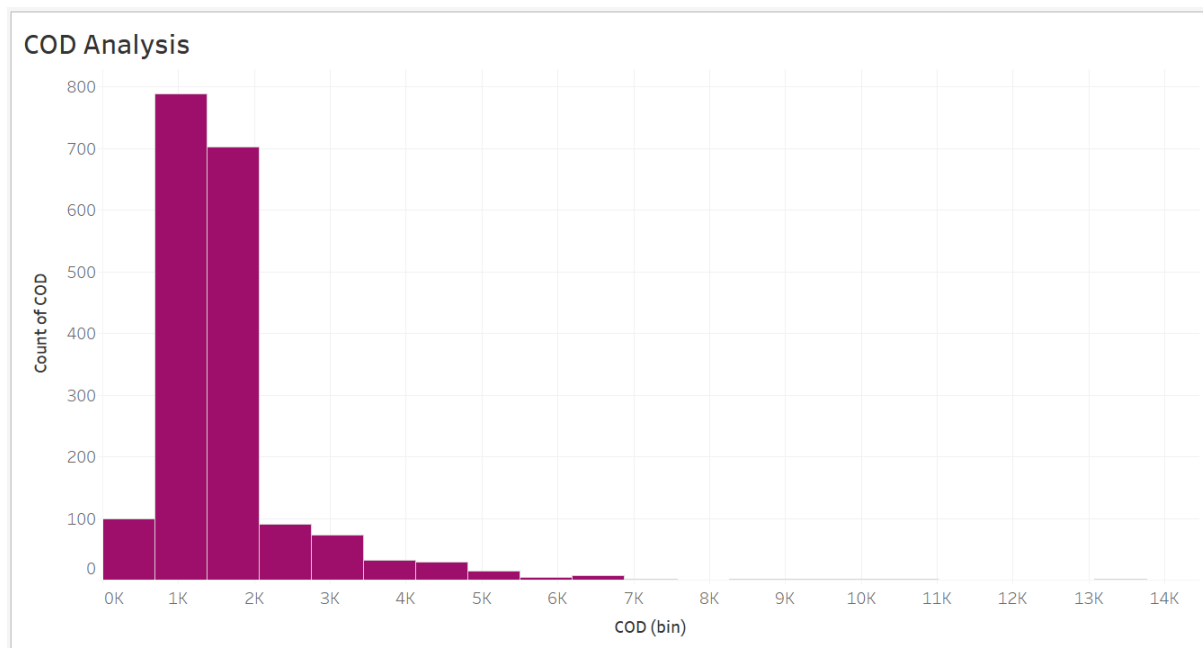
In the above graph, we can see a normal distribution that is skewed right. Most of the orders received by the company amounted to Rs 1000 to Rs 2000. We can see the count of the cost of orders decreasing as we go until Rs 7000. Very few bulk orders are obtained till the Rs. 14000 range.

Q5) Discuss the performance of the company in terms of orders received and margins over the period. Are there any patterns or insights discovered? Discuss any, if found.

Total Orders Recieved
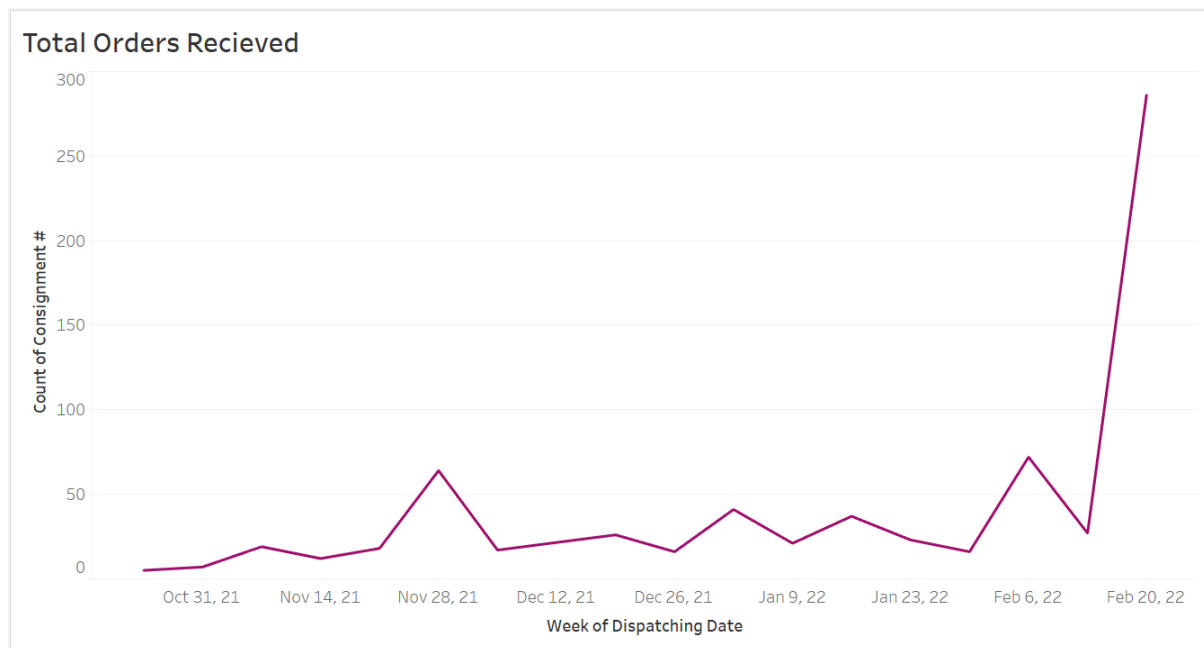
The total number of orders received started from 0 when the company launched in October 2021. The orders have been slowly and steadily increasing over time and a few peaks are observed mainly in November 2021 and Feb 2022. However, a huge sudden rise has been observed in the number of orders placed in February 2022, when the line hit a remarkable 286 orders. This can be attributed to the drastic increase in the sale of toothbrushes.

Margin Analysis (1)
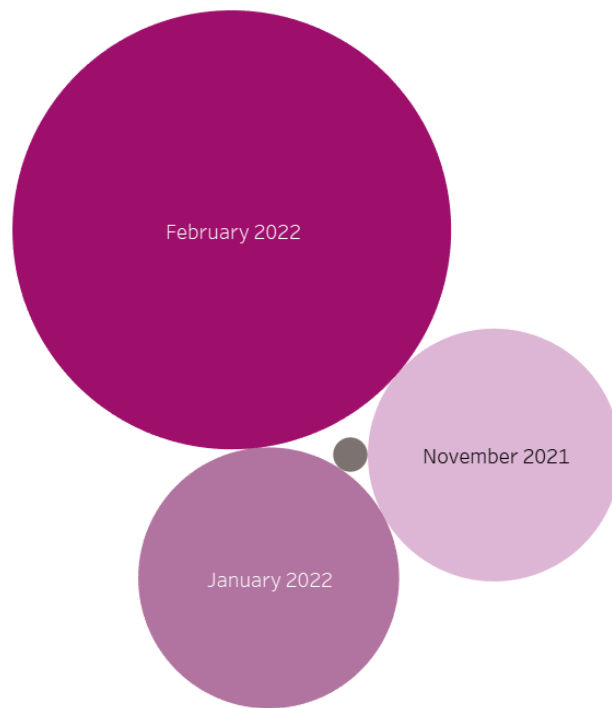
This margin has been calculated as follows: ***SUM([COD]) - SUM([Product Price])***

The above bubble charts tell us that during the launch month of October 2021, there was very little margin as shown by the small blue circle. The performance of November 2021 and January 2022 is approximately the same. February seemed to be the most profitable month for Madli Styles since its launch. However, it is interesting to see that December 2021 is missing from the above chart. Let us analyze it further using a line chart.

Margin Analysis (2)
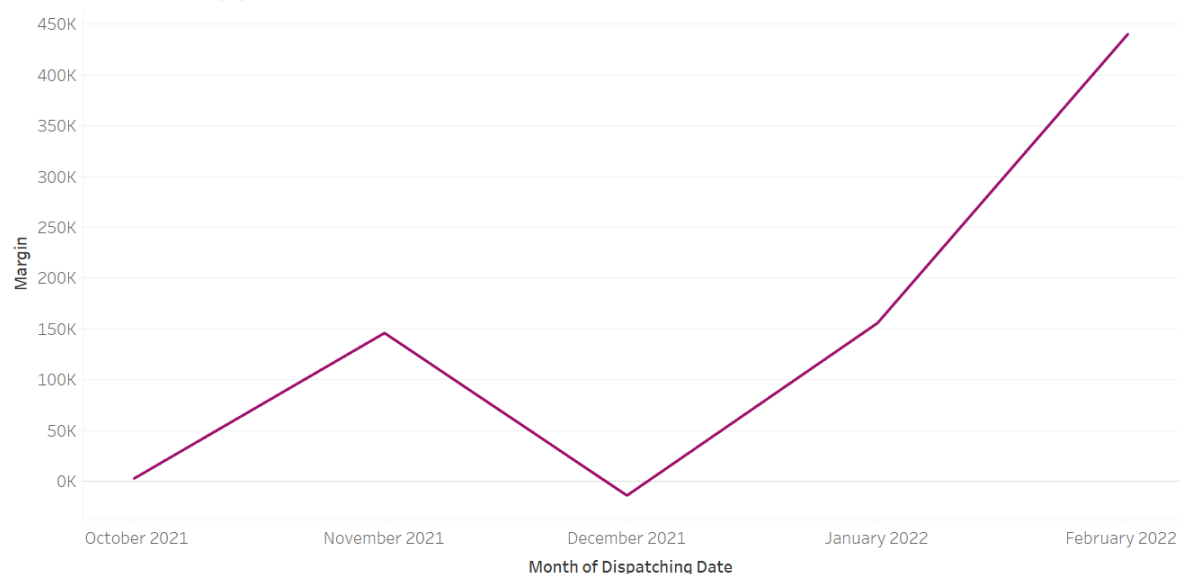
Initially, no sales targeting led to a lower number of sales. This increased eventually until November 2021, but a major dip is observed in December 2021. Upon enquiring from the business owner, we got to know that in December, stocks were manufactured but were not being sold, and inventory was piling up. The business then decided to boost its products through giveaways and different marketing strategies. This corresponds to the negative margin in December 2021. As a result of these actions, we can see that margin has been steadily increasing over time, reaching its maximum of almost Rs. 450K in February 2022.

Final Insights:

- Toothbrush was the most sold product.
- Lahore is the city that has the highest number of orders placed.
- Most of the orders of tricycles came from Lahore.
- More units of toothbrushes are sold in less period as compared to Sweatshirt sets.
- Most of the orders in the range of Rs. 1000 to Rs. 2000.
- The total number of orders has increased drastically in Feb 2022, which can be attributed to the increase in the sales of toothbrushes.
- The business started off slowly but had a loss in December 2021. However, after implementing some strategies, they were able to get back on track and increased their margin up to Rs. 450k in February 2022.

It can be said that Madli Styles correctly identified their pain areas when the company hit its low in December 2021. Working on those areas with the correct strategies proved very beneficial for the company. If they keep working on and improving their shortcomings, Madli Styles can make its mark in the e-commerce industry.