Loyalytics Case Study

## Problem Statement

Loyalytics is an AI and analytics company helping some of the world's leading brands solve their complex data challenges. Their end-to-end platform enables companies to leverage the power of data to craft strategies, create engaging customer experiences, and drive measurable business impact. They were voted one of the best CRM solutions providers in India by the CIO Review magazine in the year 2019. Analyse the sales data from the past 2 years and give recommendations to the brand in order to improve performance in the future.

Basic Data cleaning:

Basic data cleaning is been done and the steps are mentioned below

- Added a data source filter in order to filter out/remove the NULL transaction IDs.
- Changed the data type of the column ItemID from Number to String.
- Assigned Geographic role to the column Nationality Field (Country/Region).
- Converted ItemID from Measure to Dimension.
- Current Tire column: Edited the Alias for NULL values.
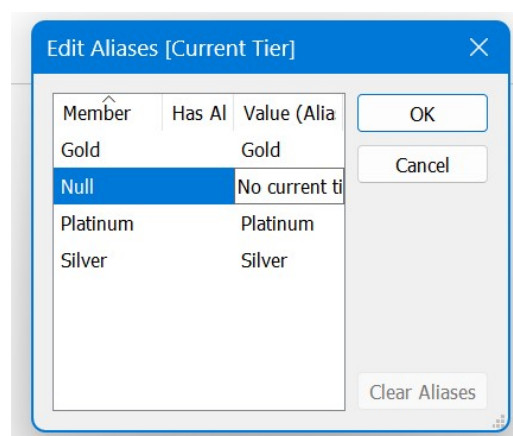
- Customer Nationality column: Edited the Alias for NULL values.
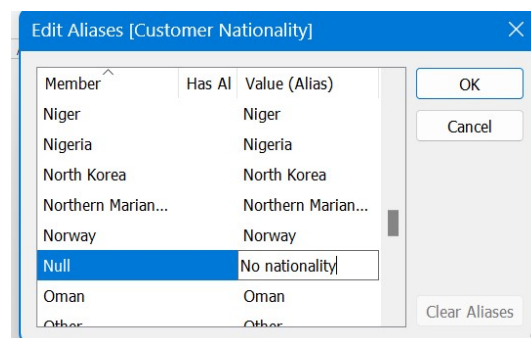
Additional columns added:

❖ **Registered or Not**
    Created this field to check whether the customer is registered or not.
❖ **Refund transaction or Not**
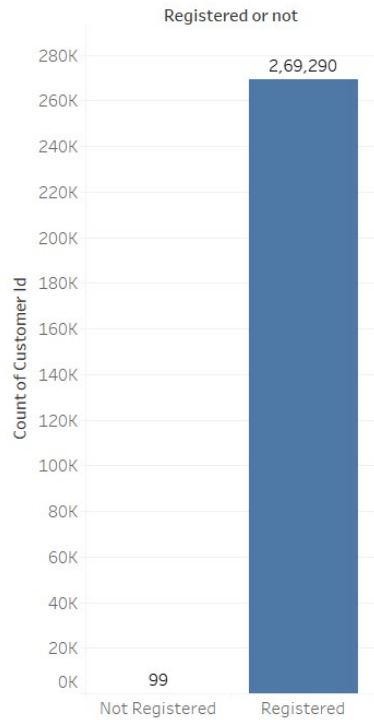   Created this field to identify whether a transaction was a refund or not.
❖ **Item refund or Not**

Created this field to determine whether or not an item was refunded.

Business cases – (Basic Questions):

Q-1:Number of customers Registered and Not Registered for the program

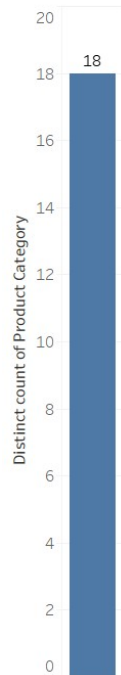Number of customers registered for the program

Insights

1. There are 2,69,290 Customers Registered for the program
2. There are 99 Customers not Registered for the program

Q-2:Total Number of unique product category

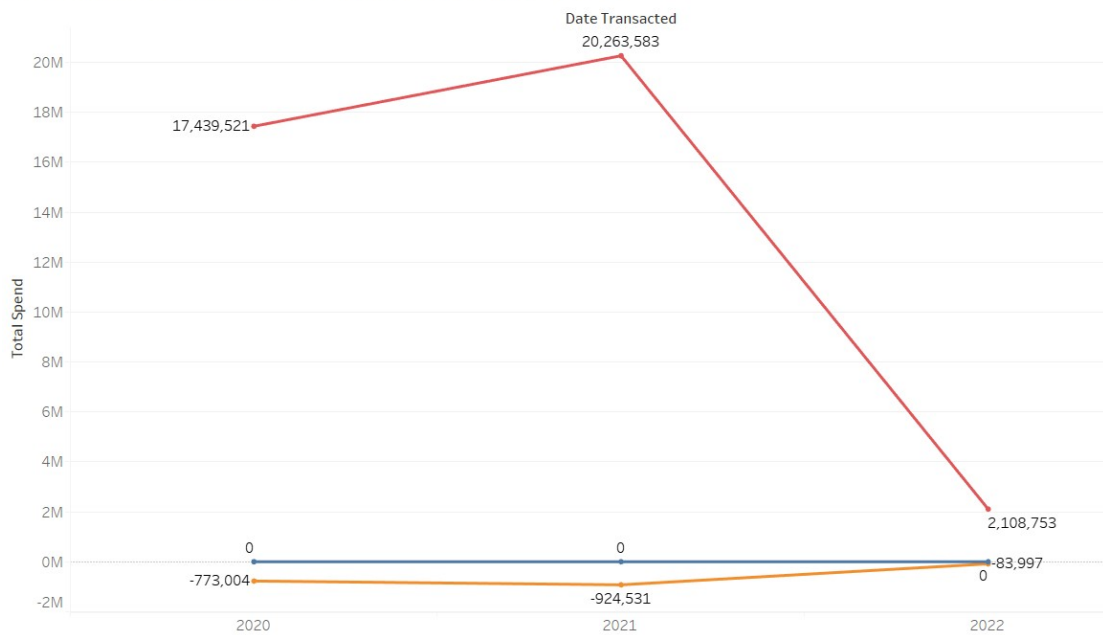## Total number of unique product category

Insights

There are 18 unique product categories

Q-3:Find out the total sales and refund during the given period(2020,2021 and 2022)

Find out the total sales and refund during the given period

Insights

The total sales and refund during 2020,2021 and 2022

1.17,439,521 is the total amount of sales during 2020 and -773,004 is the Refund transaction amount spent during 2020

2. 20,263,583 is the total amount of sales during 2021 and -924,531 is the Refund transaction amount spent during 2021

3. 2,108,753 is the total amount of sales during 2022 and -83,997 is the Refund transaction amount spent during 2022

Q-4: Percentage sales contribution by each store city and store Id to the total sales for the given period

Percent sales contribution by each store city and store id to the total sales for the given period
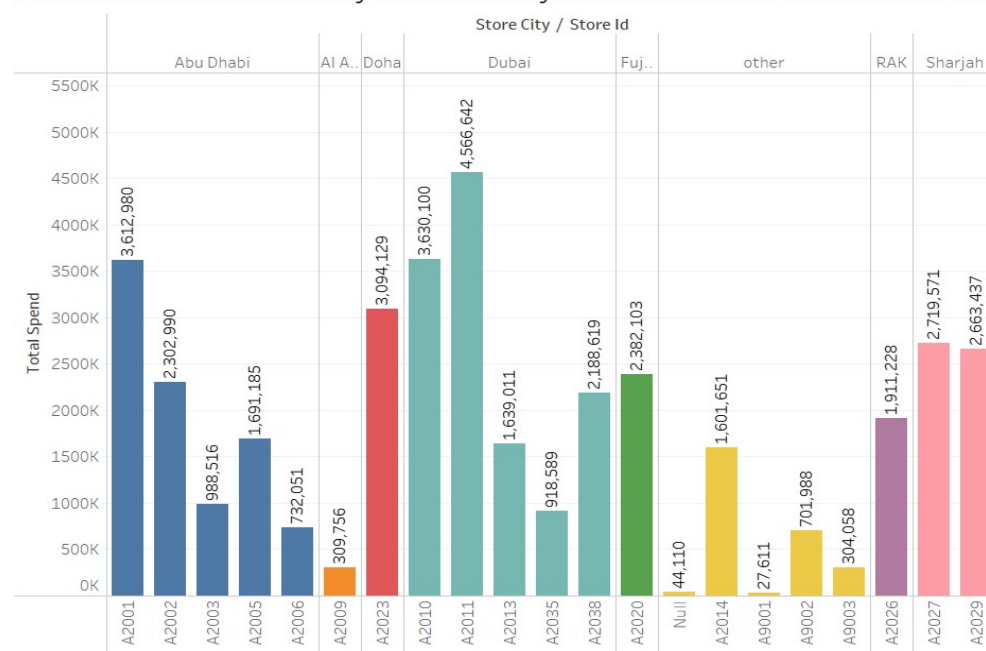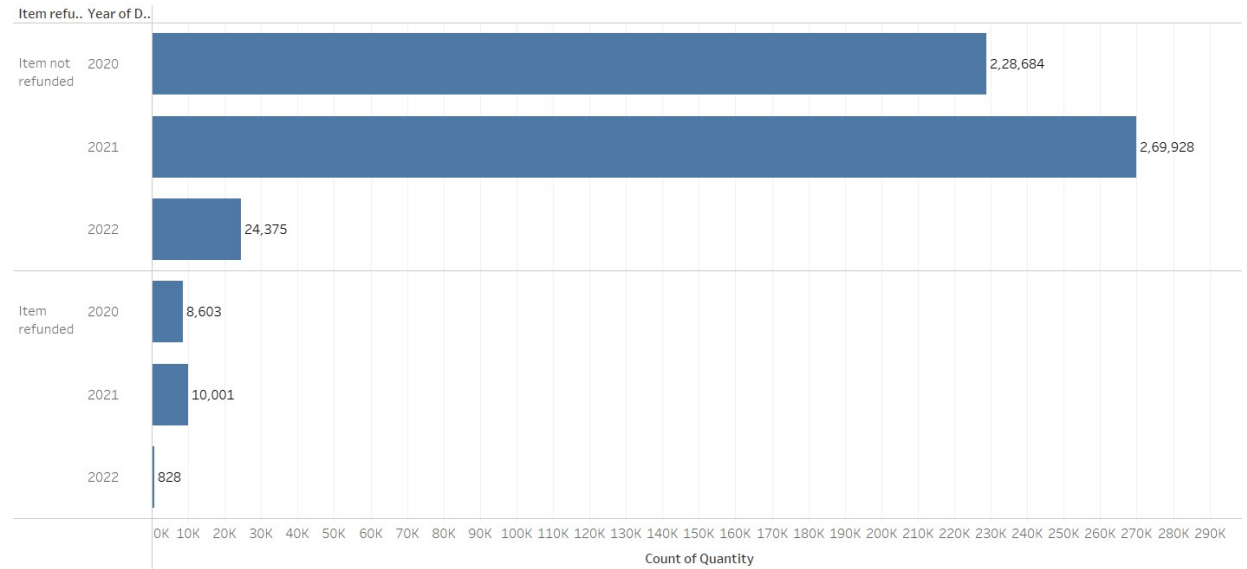
Insights

The Percent sales contribution by each store city and store Id to the total sales for the given period

1.Among the cities the highest sales is in Dubai with store Id A2011 and the lowest sales in other cities with store Id Null.

Q-5:Total Number of items refunded during the period

Total number of items refunded during the period

Insights

The total number of items refunded and not refunded during 2020,2021 and 2022

1. The highest number of items refunded in the year 2021 and the least number of items refunded in the year 2022
2. The highest number of items not refunded in the year 2021 and the least number of items not refunded in the year 2022

Q-6: Total number of freebies given during the period

Total number of freebies given during the period
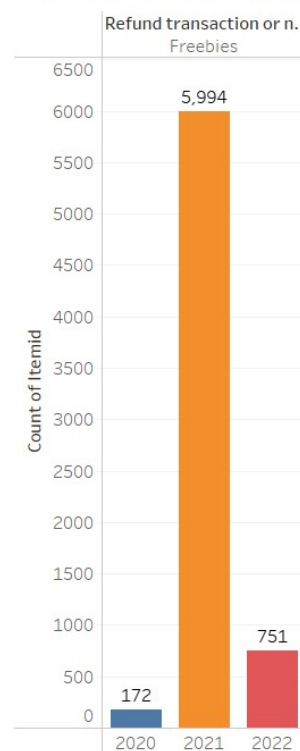
Insights

The total number of freebies during 2020,2021 and 2022

1.In the year 2021 there are highest number of Freebies when compared to 2020 and 2022

Q-7:Get the month on month trend of customers registration for the program

Get the month on month trend of customers registration for the program
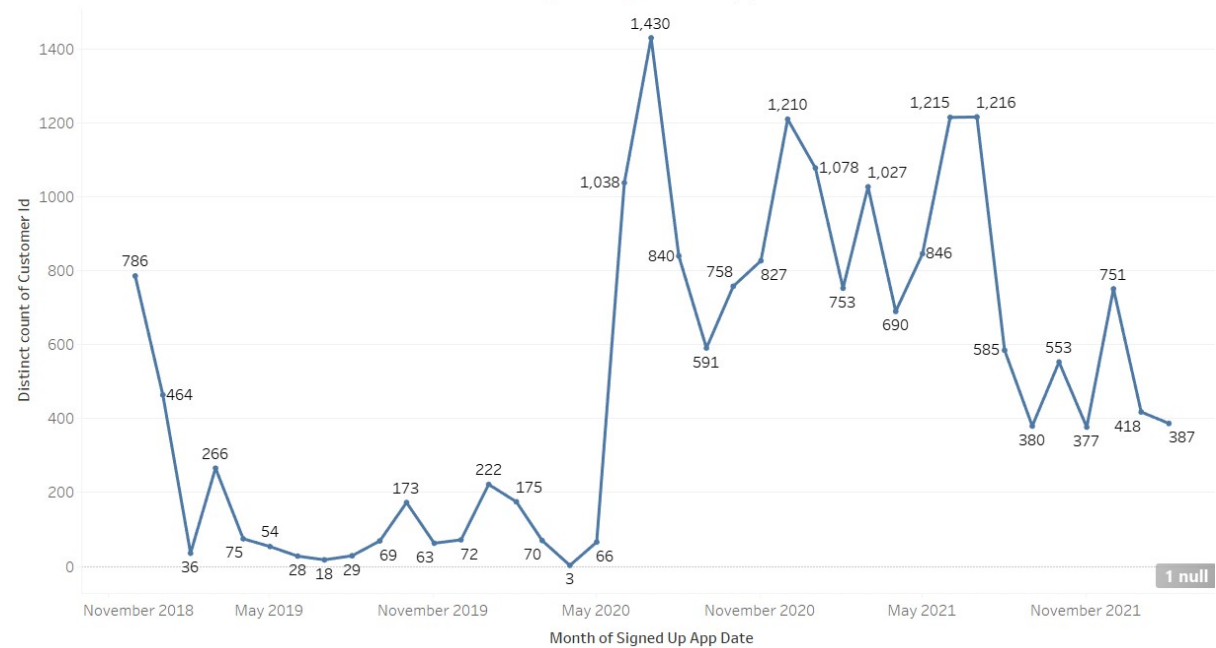

Insights

The month on month trend of customers registration for the program

1.The highest number of customers for the program are registered in the month and year December 2020 and least number of customers are registered in the month and year April 2020

Q-8:Get the month on month trend of customers registering on the app

Get the month on month trend of customers registering on the app

Insights

The month on month trend of customers registering on the app

1.Among the customers registered on the app, the highest number of customers are registered on July 2020 and least number of customers are registered on April 2020

Q-9: Monthly trend in number of transaction of registered customers by current tier

Monthly trend in number of transaction of registered customers by current tier.
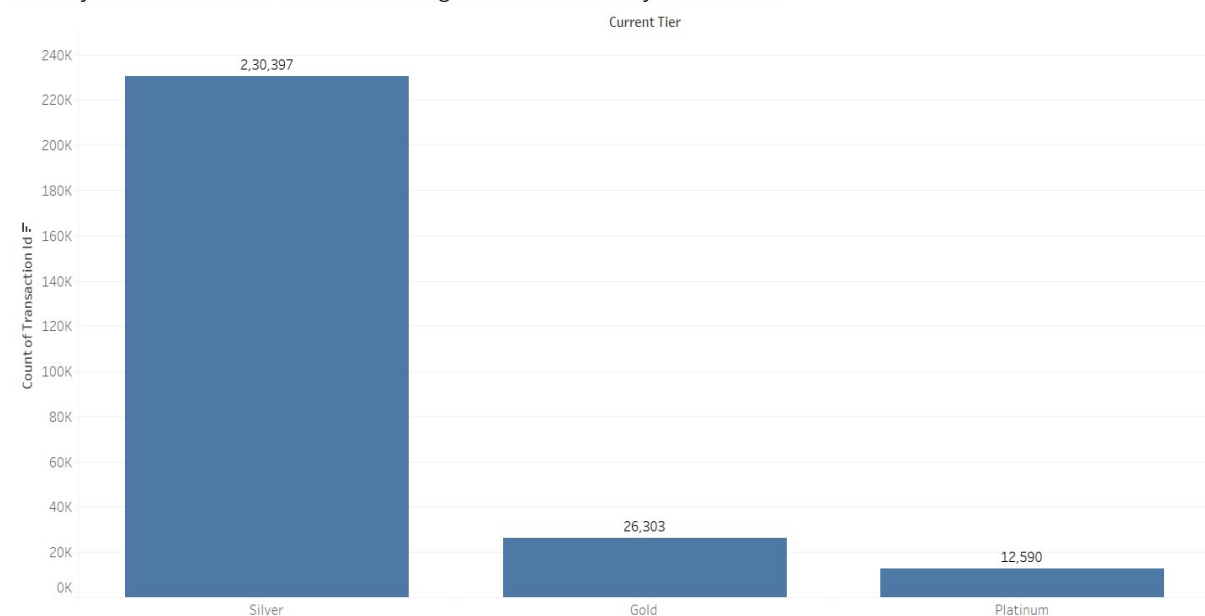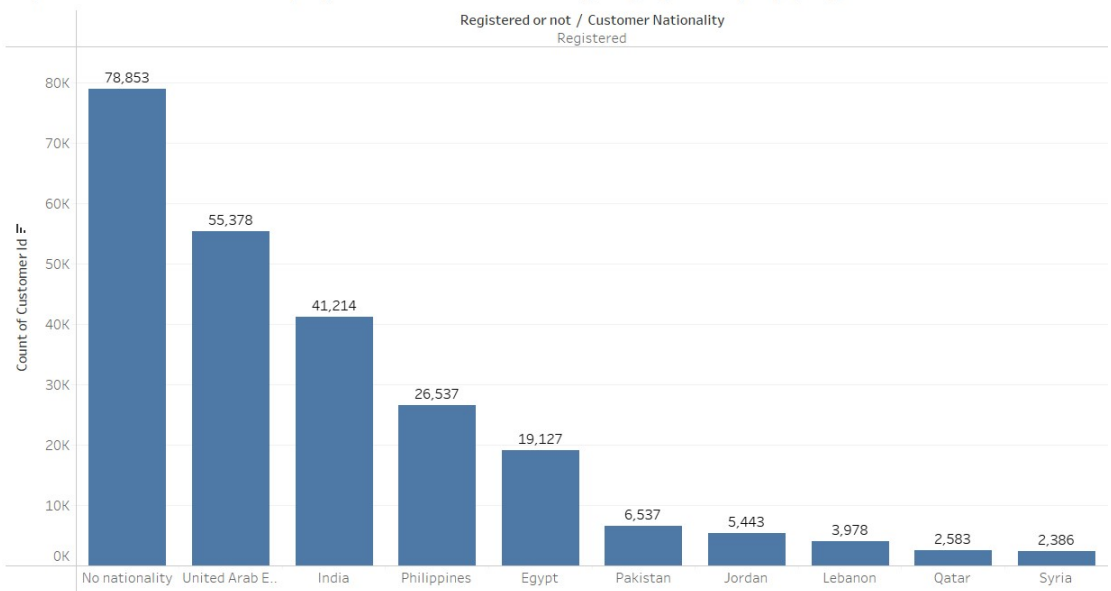

Insights

Monthly trend in number of transaction of registered customers by current tier(Silver,Gold and Platinum)
1.Number of transaction of registered customers in silver is the highest and the number of transaction of registered customers in platinum is the least

Q-10:Top 10 customer nationality by number of customer signing up for loyalty program

Top 10 customer nationality by number of customer signing up for loyalty program

Top 10 customer nationality by number of customer signing up for loyalty program
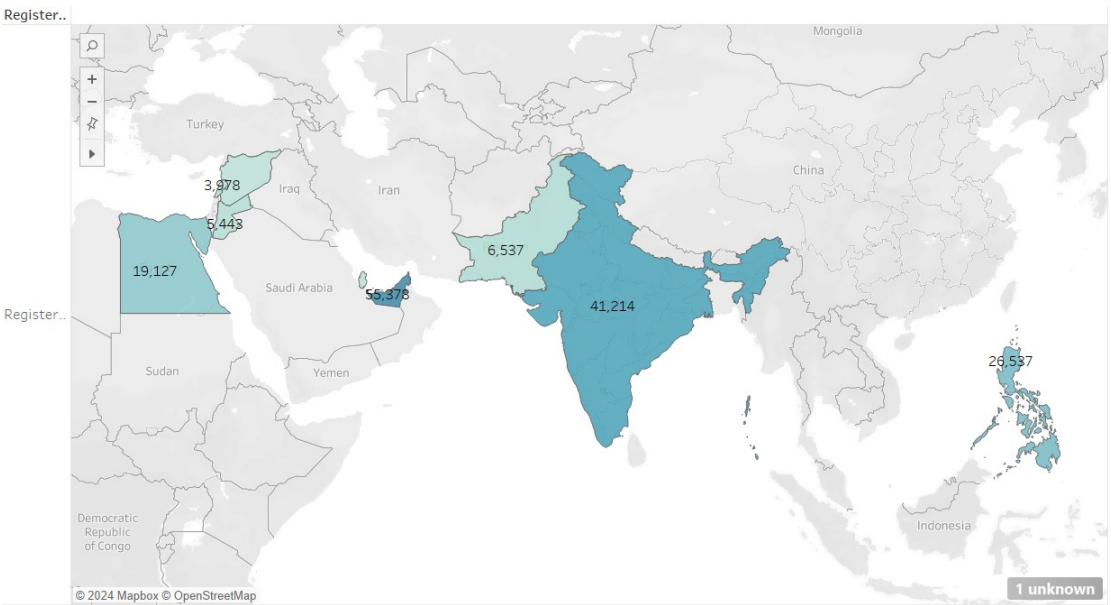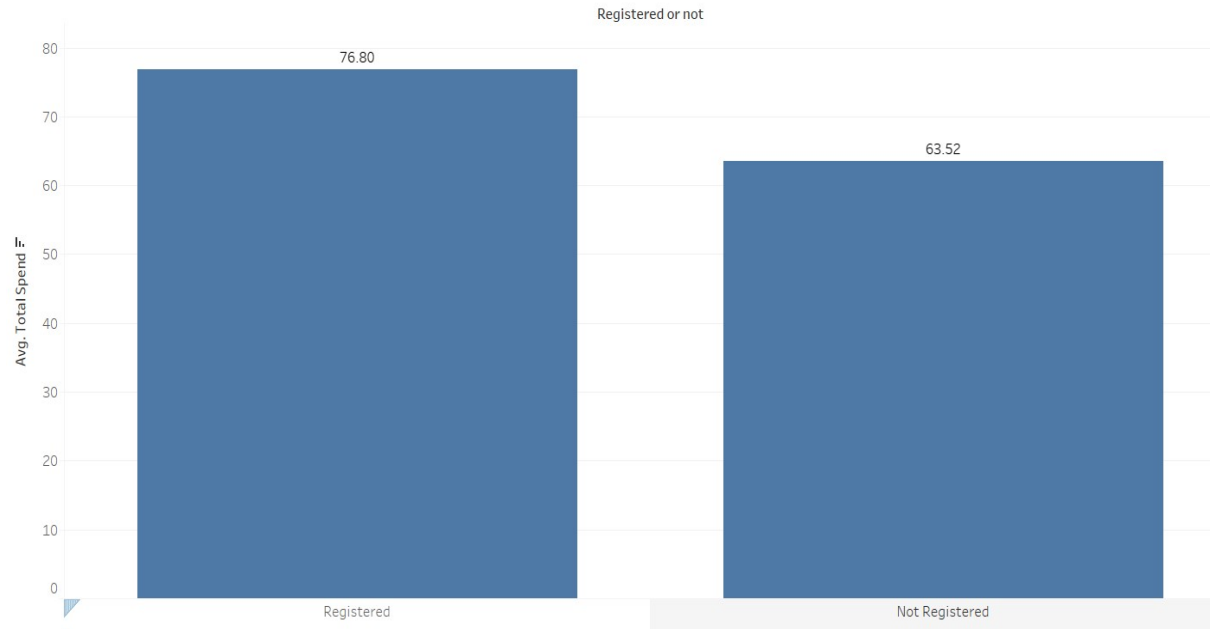

Insights

The top 10 customer nationality by number of customer signing up for loyalty program

1. No Nationality holds most of the customers registered signing up for loyalty program when compared with remaining Nationalities.

Q-11:Count of customer from each country and number of customers based on current tier

Count of customer from each country and number of customers based on current tier

Count of customer from each country and number of customers based on current tier

Insights

The count of customer from each country and the number of customers based on current tier

1.In the given Current tier (Gold, Silver and Platinum) customers from each country,the highest number of customers are in no nationality-silver and the least number of customers are in Platinum-Belarus,Silver-Bouvet Island,Bummer,Cabo Verde,Lesotho,Macao SAR,Moldova,Mozambique,Saint Vincent and the Grenadines,Samoa,Taiwan and Tokleau

Q-12:Trend in avg total spent by registered customers and not registered customers

Trend in avg total spent by registered customers and not registered customers
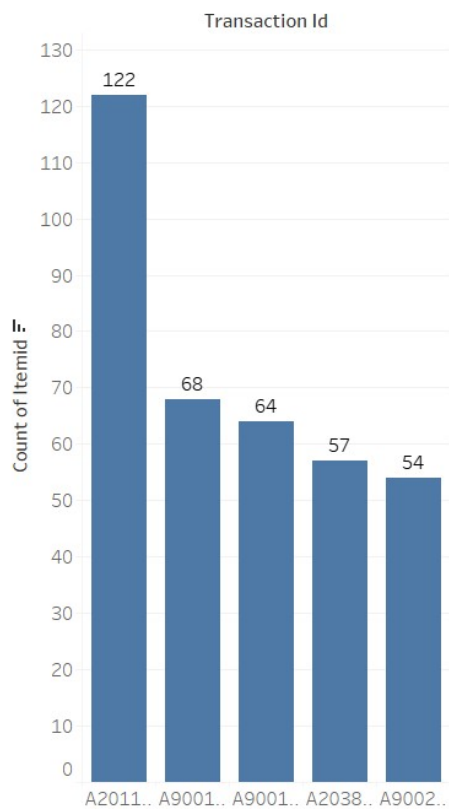

Insights

Trend in avg total spent by registered customers and not registered customers

1. The avg total spent by registered customers is more when compared to the avg total spent by not registered customers.

Q-13:Top 5 and bottom 5 items by number of transactions done

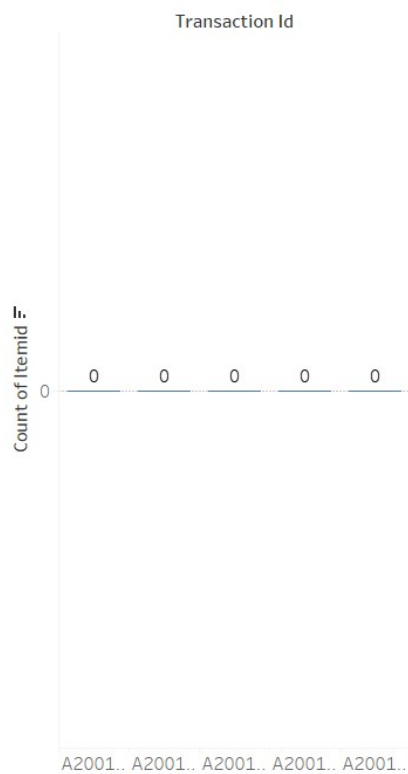## Top 5 and bottom 5 items by number of transactions done

Insights

Top 5 items by number of transactions done

1.The highest number of transactions done in transaction Id A2011 and the least number of transactions done in transaction Id A9002

Q-13(2):

Top 5 and bottom 5 items by number of transactions done

Transaction Id

Count of Itemid

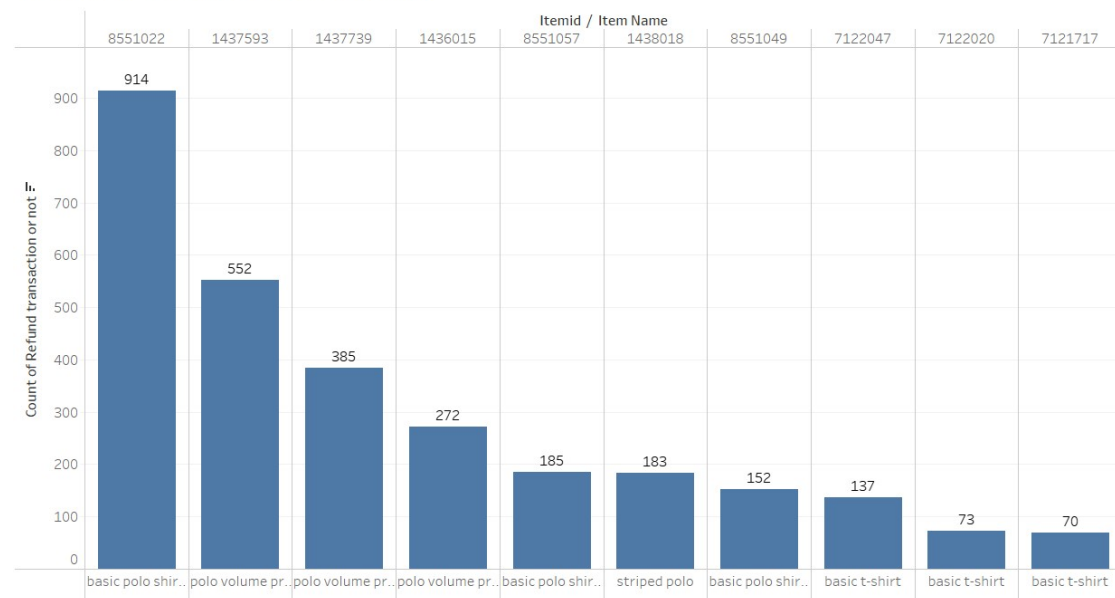0   0   0   0   0

A2001.. A2001.. A2001.. A2001.. A2001..

Insights

Bottom 5 items by number of transactions done

1.Zero(0) transactions are done for all the bottom 5 items with transaction Id A2001

Q-14:Find items with most number of refunds

Find items with most number of refunds

Itemid / Item Name									
8551022	1437593	1437739	1436015	8551057	1438018	8551049	7122047	7122020	7121717
914	552	385	272	185	183	152	137	73	70
basic polo shir..	polo volume pr..	polo volume pr..	polo volume pr..	basic polo shir..	striped polo	basic polo shir..	basic t-shirt	basic t-shirt	basic t-shirt

Count of Refund transaction or not

Insights

The items with most number of refunds

1.Basic polo shirts with Item Id 8551022 has the most number of refunds

Q-15: Trend in number of transactions over time

Trend in number of transactions over time
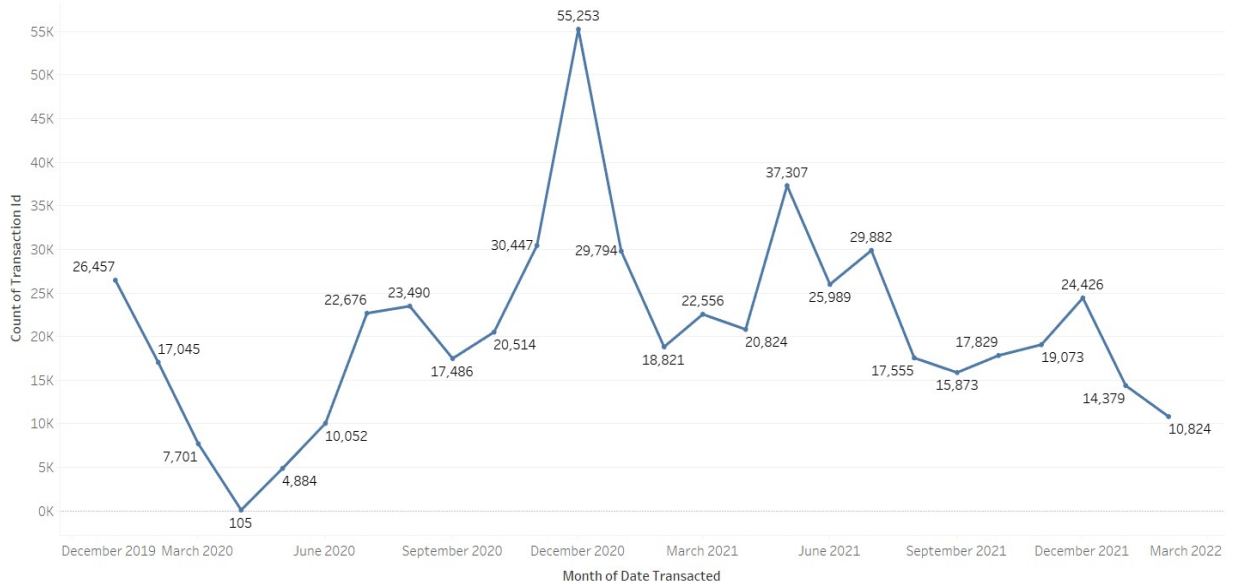
Insights

Trend in number of transactions over time

1.Maximum number of transactions done in the month and year of December 2020
2.Minimum number of transactions done in the month and year of April 2020

Q-16:Top 10 trending product categories by average total spent

Top 10 trending product categories by average total spent
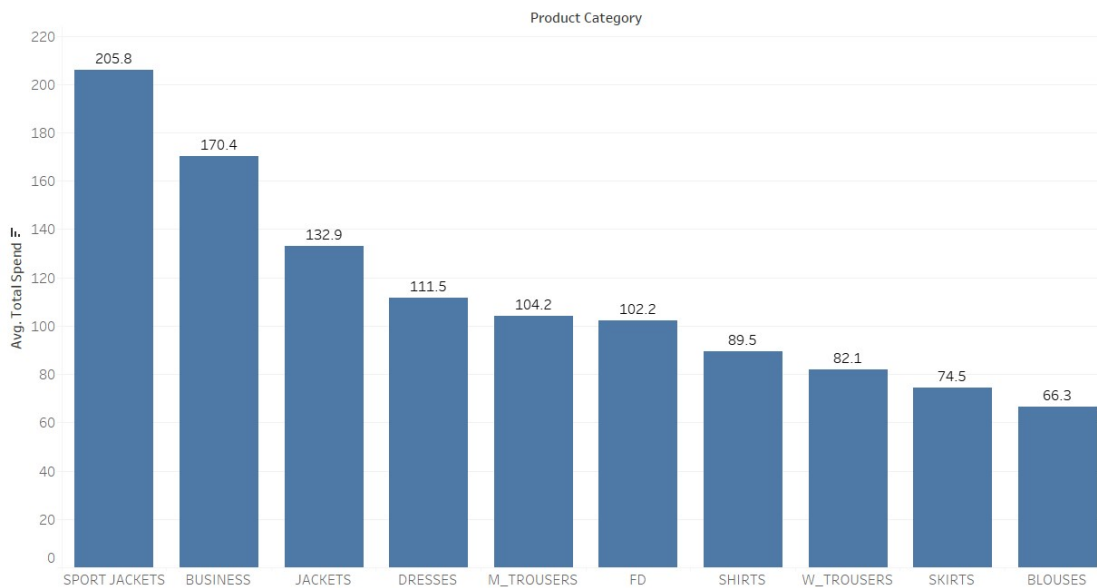
Insights

The top 10 trending product categories by average total spent

1. The maximum avg total amount spent by sport jackets
2. The minimum avg total amount spent by blouses

ADVANCED QUESTIONS

QA1: Percentage of registered customers signed up on app

Percentage of registered customers signed up on app

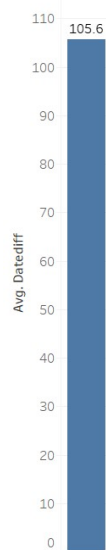| Registered or ..	
Not Registered	0.04%
Registered	99.96%

Insights

Percentage of registered customers signed up on app

1.99.96% Registered customers signed up on an app
2.0.04% Not registered customers signed up on an app

QA2:Find out what is the average time period difference between customers registration date and 1st transaction date

Find out what is the average time period difference between customers registration date and 1st transaction date

Insights

1.105.6 days is the average time period difference between customers registration date and 1st transaction date

QA3:Percentage of registered customers where customer Id is present but customer nationality is missing

Percentage of registered customers where customer id is present but customer nationality is missing
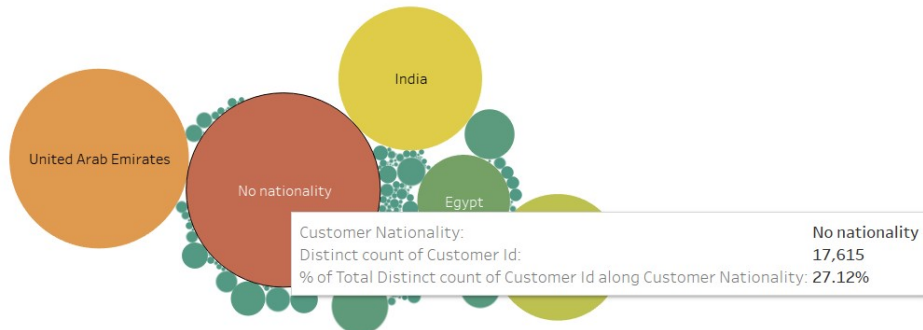
Insights

Percentage of registered customers where customer Id is present but customer nationality is missing

1.27.12 % of registered customers where customer Id is present but there is no nationality

QA4:Analyze percentage contribution to total sales for each year by customer registration date

Analyze percentage contribution to total sales for each year by customer registration date.

Year of D..	
2020	46.52%
2021	50.69%
2022	2.78%

Insights

1. In the year 2020, 46.52% contributed to total sales.
2. In the year 2021, 50.69% contributed to total sales.
3. In the year 2022, 2.78% contributed to total sales.

QA5: Find customer order frequency i.e how many customers had done 1,2,3,….N transactions

Find customer order frequency ie how many customers had done 1,2,3..N transactions
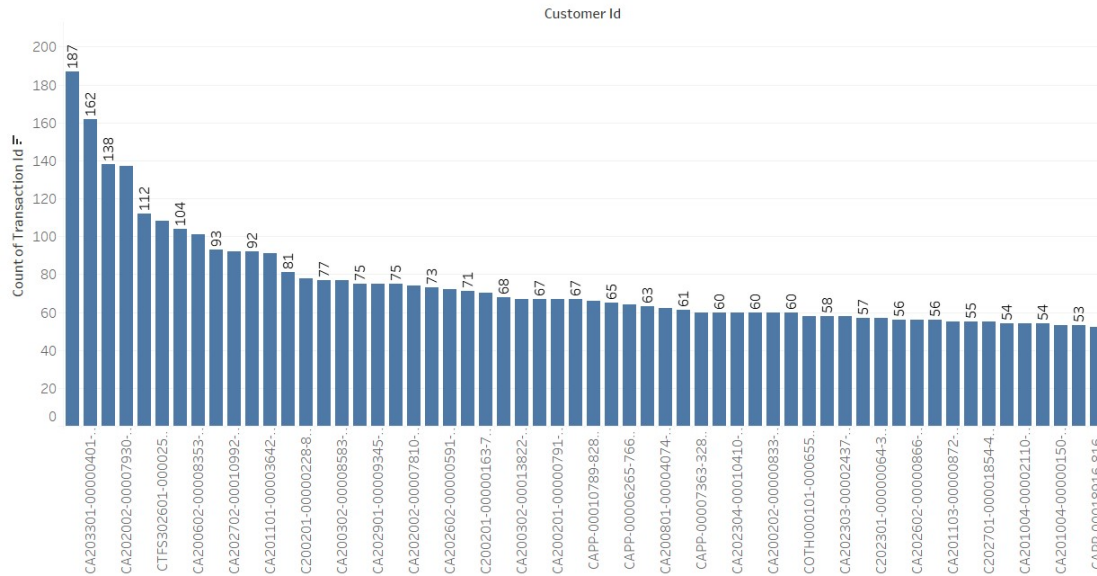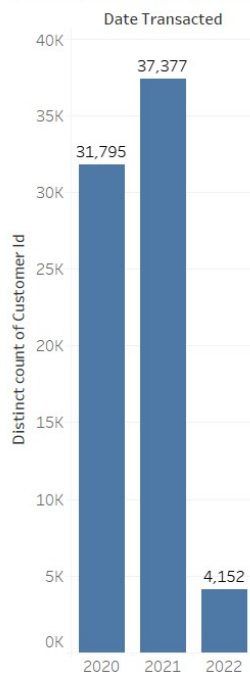

Insights

Customers had done 1,2,3….N transactions

1.The above graph represents,the number of transactions done by each customer with specific customer Id

QA6:Year on Year customer retention who registered for the program
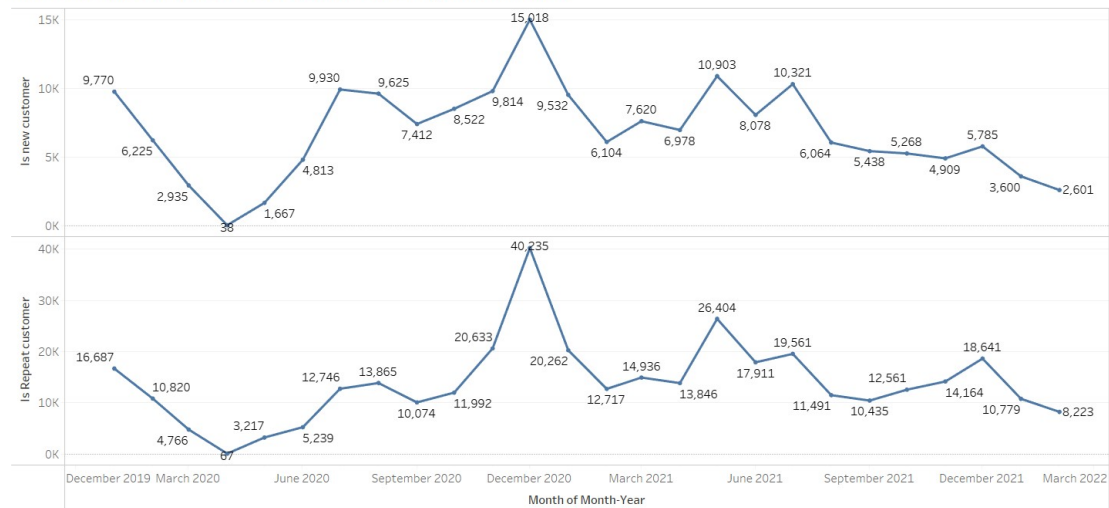

Insights

Year on year customer retention who registered for the program

1. The highest count of customer retention who registered for the program is in the year 2021
2. The least count of customer retention who registered for the program is in the year 2022

QA7:Month on month count of new customers and Repeat customers

Month on Month count of new customers and repeat customers

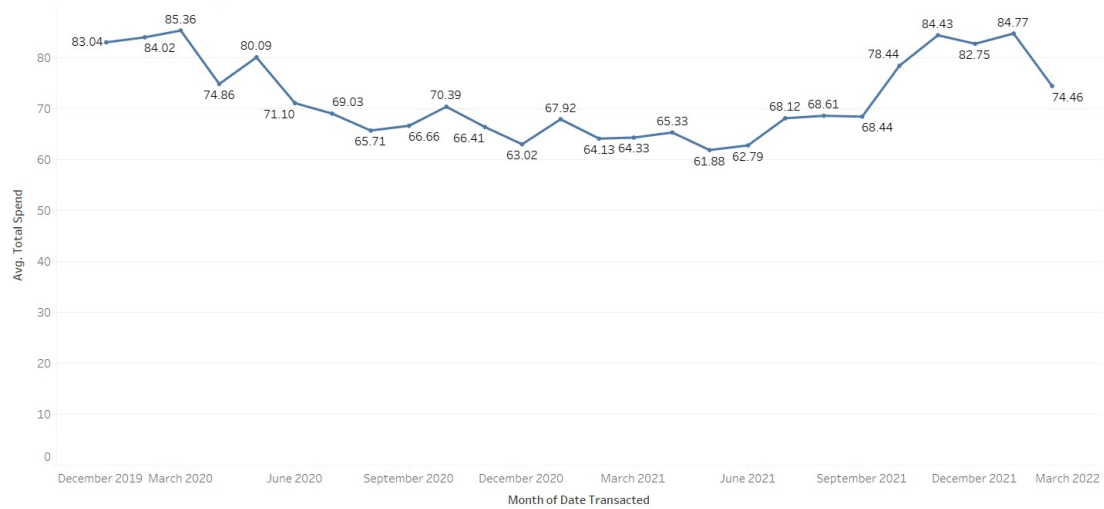## Insights

Month on month count of new customers

1. Maximum number of new customers in the month of December 2020
2. Minimum number of new customers in the month of April 2020

Month on month count of repeat customers

1. Maximum number of repeat customers in the month of December 2020
2. Minimum number of repeat customers in the month of April 2020

QA8: Month on month average transaction value

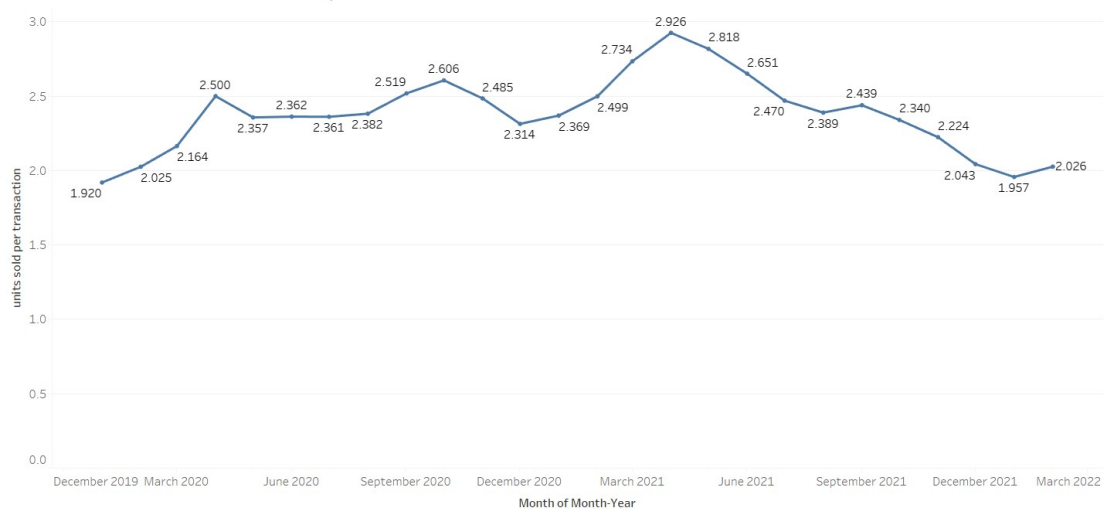Month on month average transaction value

Insights

The above Line map represents Month on month average transaction value

The highest average transaction value is 85.36 in the year March 2020
The least average transaction value is 61.88 in the year May 2021

QA9: Month on month trend in units sold per transaction

Month on month trend in units sold per transaction

Insights

The above Line map represents Month on month trend in units sold per transaction

1. The maximum units sold per transaction is 2.926 in the year April 2021
2. The minimum units sold per transaction is 1.920 in the year January 2020

QA11:Find out the basket size for each Product Category

Find out the basket size for each product category
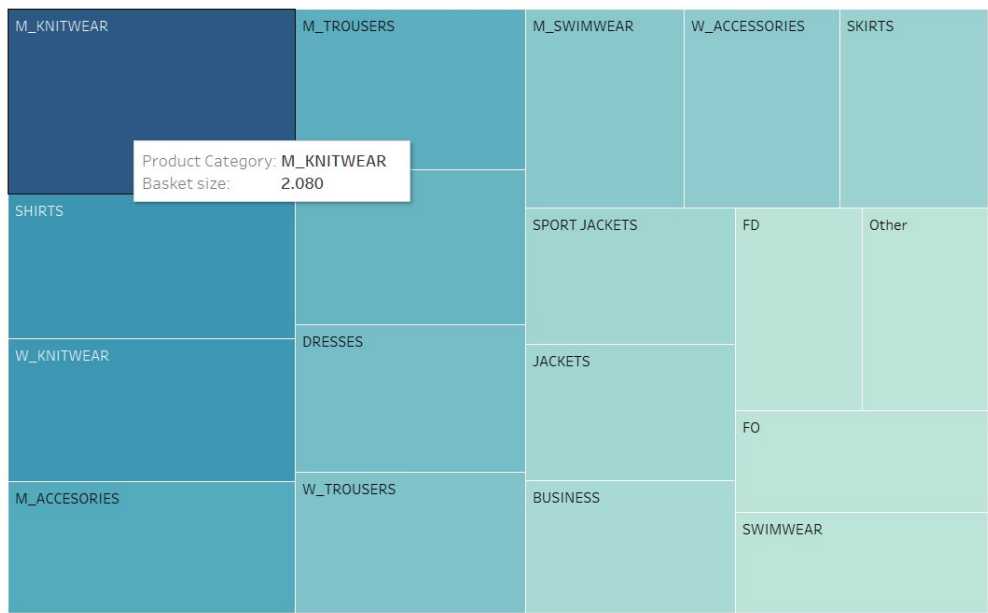
Insights

The above Heat map represents the basket size for each product category

Ex:M_knitwear=2.080