

## SHORT SUMMARY

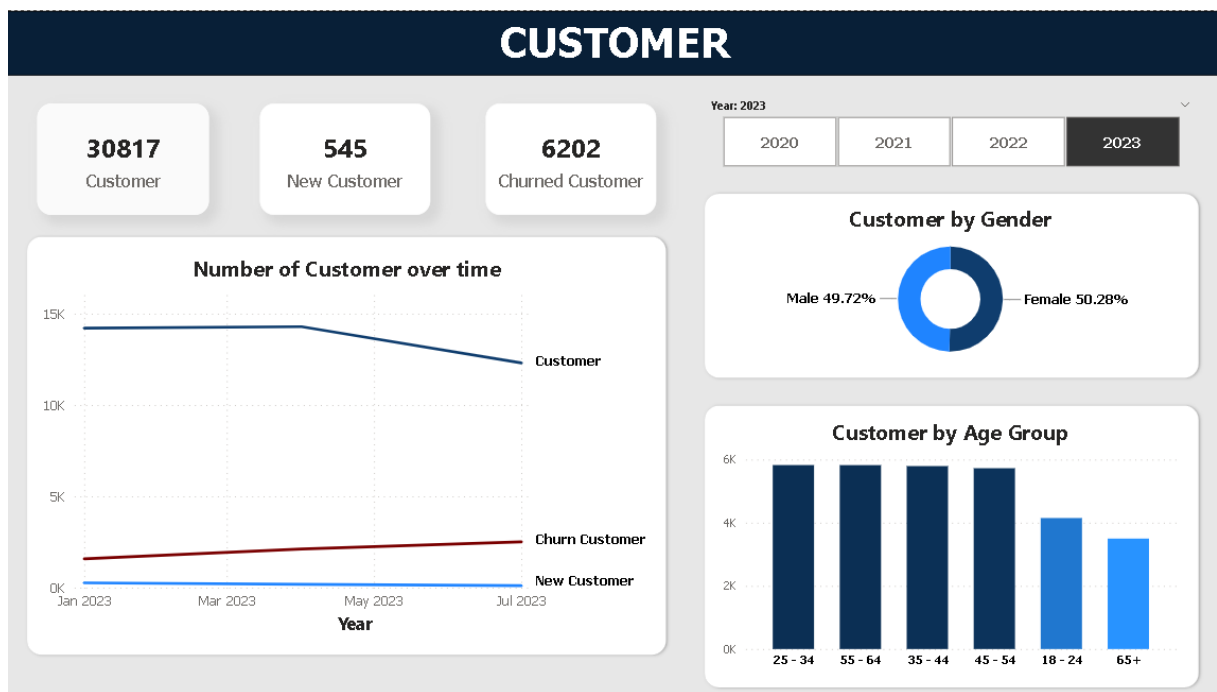
### Problem:

- Analyze the business performance and development of an e-commerce retail business after 4 years to make appropriate recommendations for development.

### Exploratory analysis:

#### 1. Customer

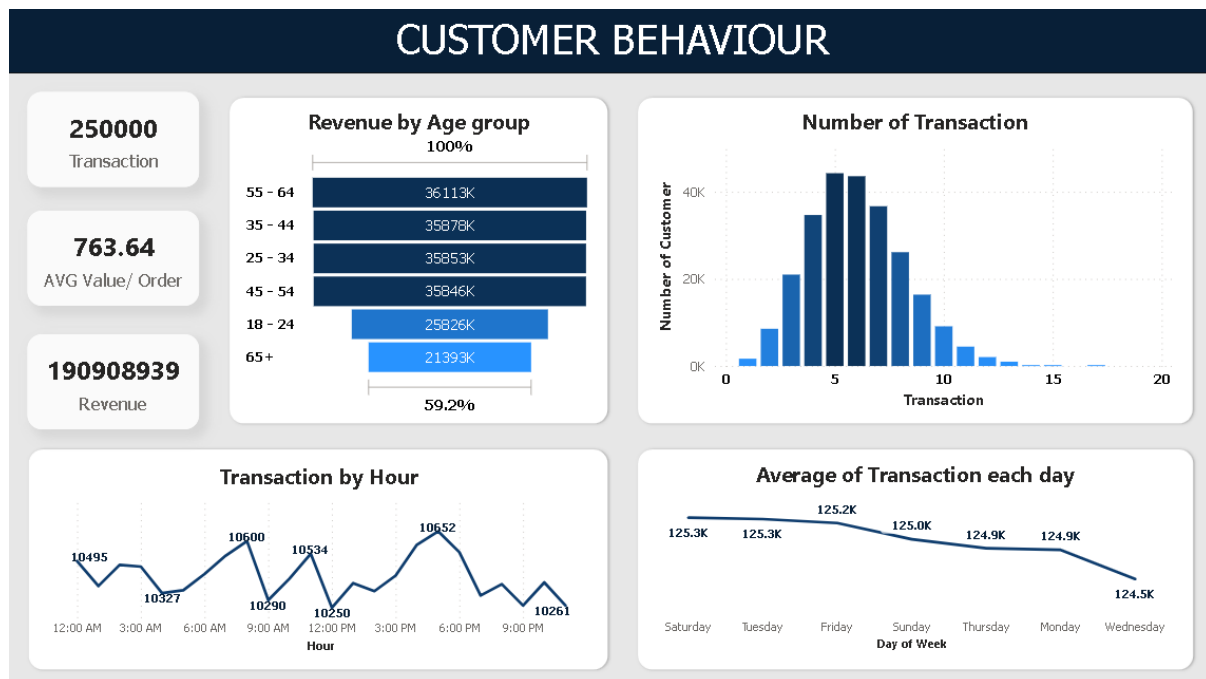
- The customer base of the business has a fairly balanced ratio of men and women, partly because the products of the business are very diverse and suitable for everyone.
- The main customer group of the business is from 25-65 years old. The group of students (18-24) and people over 65+ is relatively smaller.
- In 2023, the number of new customers will increase slightly, while the number of customers churning will increase, which will lead to a sharp decline in the number of customers, especially from April 2023.



#### 2. Purchasing Behaviour

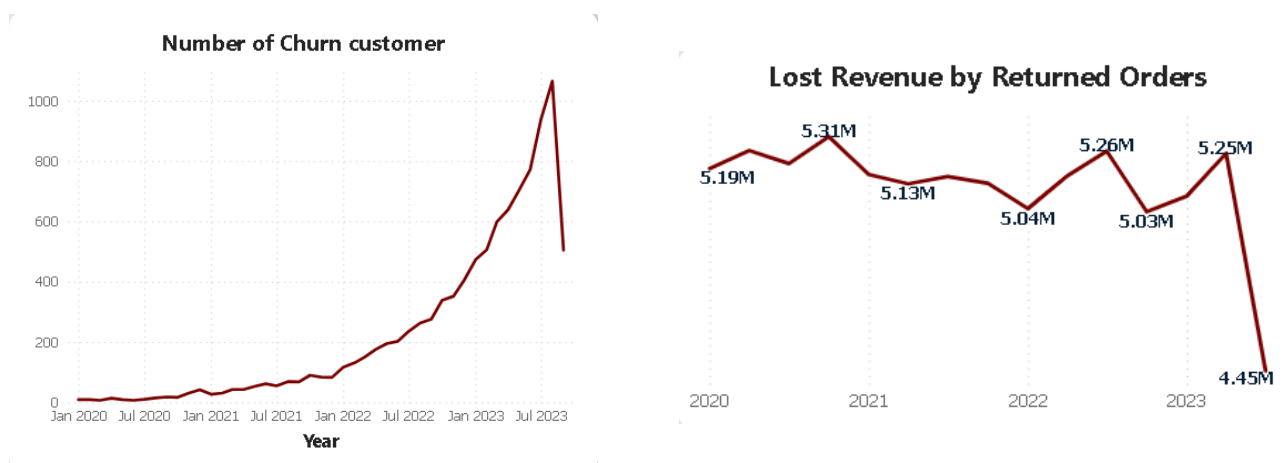
- There were a total of 250000 transactions within 4 years, bringing in more than 190 million in revenue.
- Customers tend to make 4-7 trades mainly, with a small number of customers making more trades, up to 20 trades.

- The usual times when many transactions occur are around 8am, 11pm and afternoon hours from 16 – 19h. Besides, weekends like 6th, 7th, Sunday and 3rd usually have the most transactions.

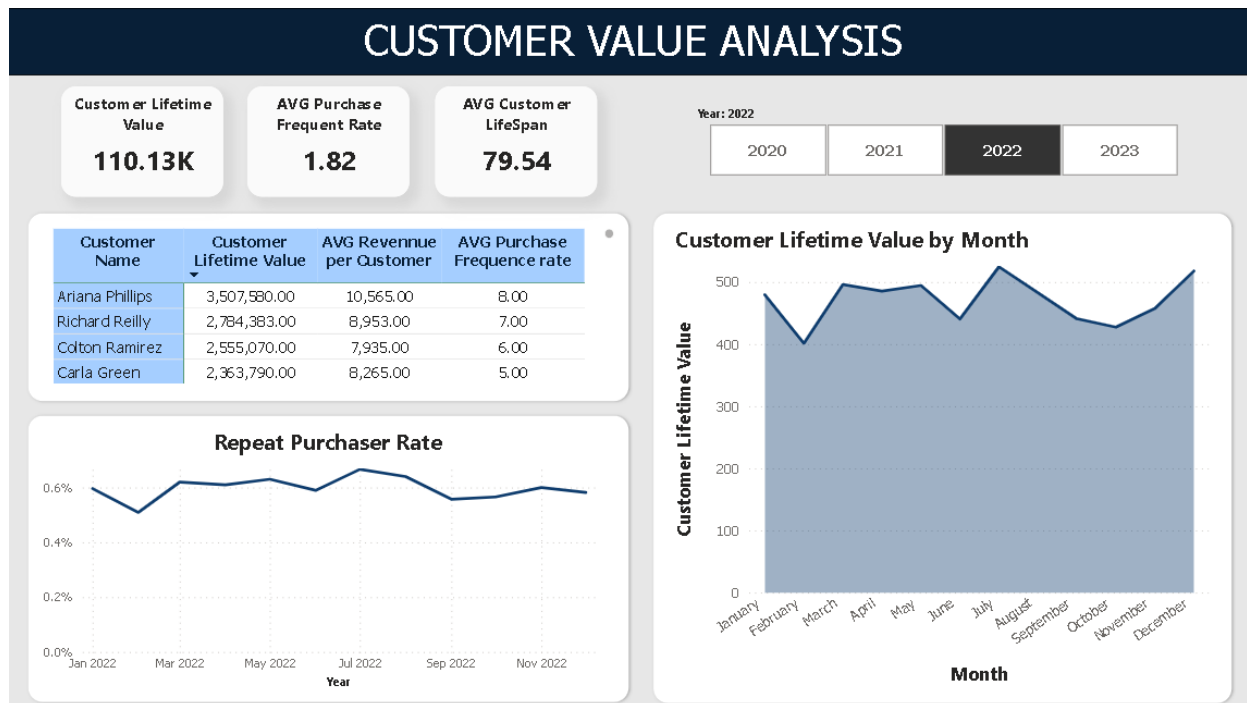


### 3. Churn & Return analysis

- The number of churn customers increased year over year to 9942 customers, the churn rate was 20.01%, a sharp increase from June 2022. As for September, because all the data of a month has not been collected, it is not possible to conclude.
- The order return rate is high, nearly 40%, which affects revenue, each month losing about 5M due to the value of returned orders.



### 4. Customer Lifetime Value

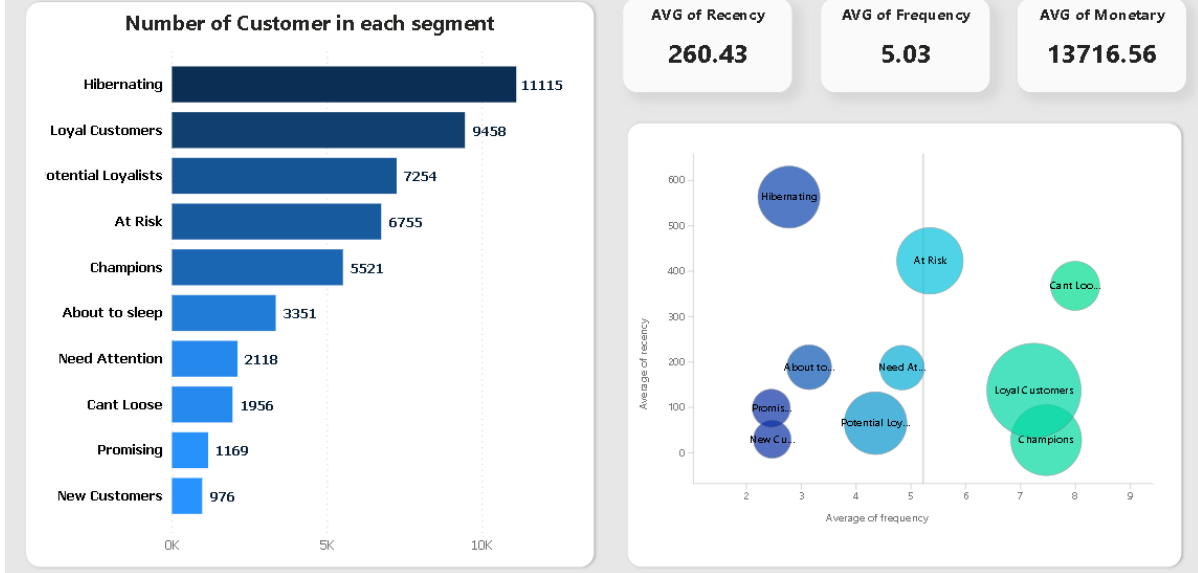


- The average Customer Lifetime Value is about 110K, which fluctuates over the months of the year.
- Repeat purchaser rate = the total number of customers with more than 1 transaction divided by the total number of transactions. In 2022, the index fluctuated between 0.5% and 0.7%.

## 5. RFM analysis

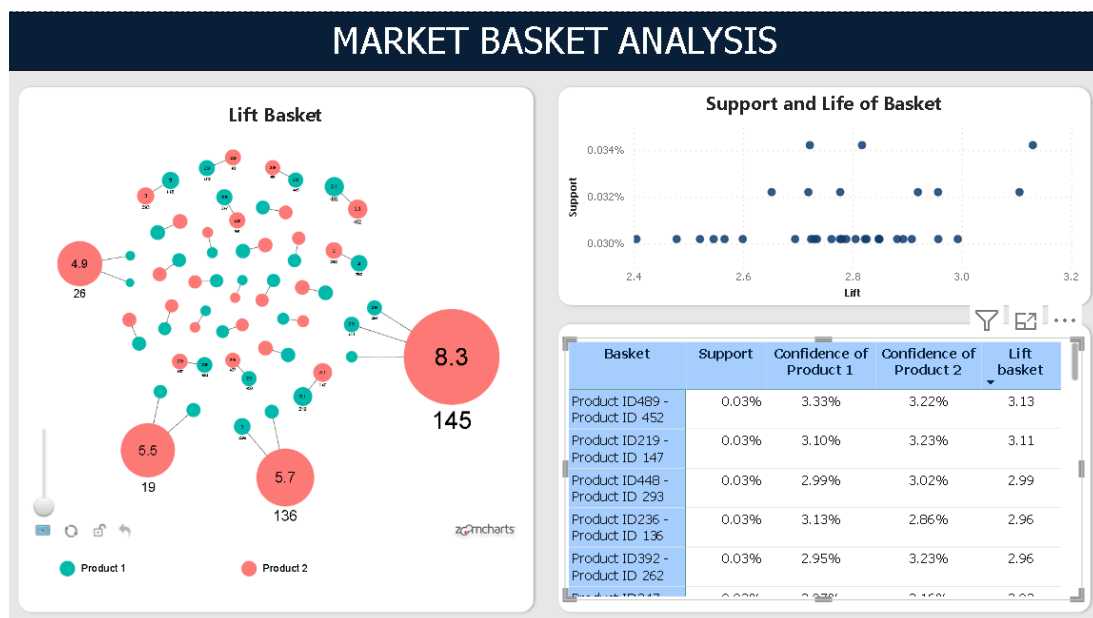
- The analysis focuses on 3 indicators: Recency, Frequency and Monetary, clustering customers according to two indicators R and F.
- Hibernating customer group has the highest number, followed by Loyalty Customer and Potential Customer. This is relatively positive, but strategies are needed to promote the Hibernating customer group and also need to pay attention to the number of customers in the At Risk group which is ranked 4th.

## RFM ANALYSIS



### 6. Market Basket Analysis

- Market Basket analysis shows which groups of products are often bought together to plan to cross-sell or organize products at the website. As can be seen, potential product groups such as 489 – 452, 219 – 147, 448 – 293 ...



### 7. Sale Performance

- Analyzing the revenue situation, we can determine the increase or decrease in revenue over the years, compare revenue between the same periods in different years, based on which to understand and analyze the factors leading to that change

## SALE PERFORMANCE

760.77

AVG order value

51099870

Revenue

-0.34%

% Change to LY

Year: 2022

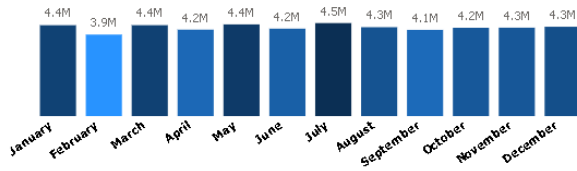
2020

2021

2022

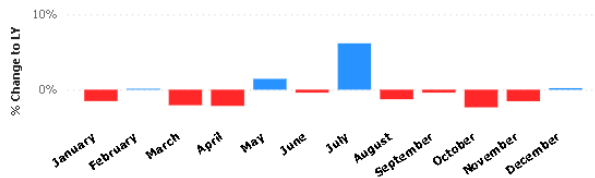
2023

Revenue by Month

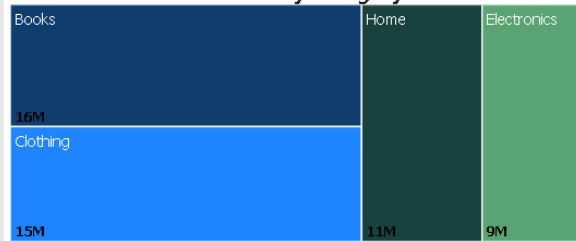


Name	Revenue	Transaction	Sales LY	Change to LY	% Change to LY
Clothing	15278239	19823	15057943	220296	1.46%
Electronics	8862075	11790	8869018	-6943	-0.08%
Home	10778684	14161	10892616	-113932	-1.05%
Books	16180872	21395	16452494	-271622	-1.65%

% Change to LY by Month



Revenue by Category



## SALE PERFORMANCE OVER TIME

49673

Customer

190908939

Revenue

250000

Transaction

Year: All

2020

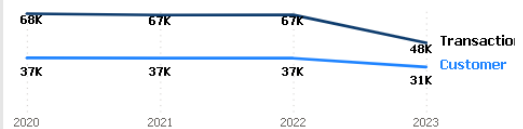
2021

2022

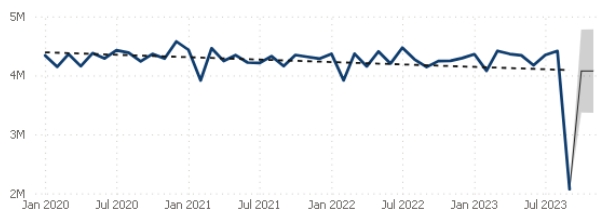
2023

Year	Transaction	Revenue	Sale Running total	Change to LY	% Change to LY
2020	68045	51960327	51960327	51960327	0.00%
2022	67169	51099870	51099870	-172201	-0.34%
2021	67099	51272071	51272071	-688256	-1.32%
2023	47687	36576671	36576671	-1732414	-4.52%

Customer and Transaction over time



Revenue



Revenue by Month

