

# ONLINE RETAIL RFM ANALYSIS

Unsupervised Learning

by: Team 3

# Our Team



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01

## THE OBJECTIVES



# Background

E-commerce has become a new channel to support businesses development. Through e-commerce, businesses can get access and establish a wider market presence by providing cheaper and more efficient distribution channels for their products or services. E-commerce has also changed the way people shop and consume products and services. Many people are turning to their computers or smart devices to order goods, which can easily be delivered to their homes.



# Goals

- How was the sales trend over the months?
- What are the most frequent purchased products?
- How many products does the customer purchase in each transaction?
- How does each cluster/group contribute to the company's revenue?
- What are the interval date between transactions?
- Based on your findings, what strategy could you recommend to the business to gain more profit?



# Challenges

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- Huge Amount of Data
- Missing Values
- Ambiguous Meaning of Columns

# Methodology

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- Data Preparation
- Data Preprocessing
- RFM model Building
- Clustering
- Exploration Data Analysis





**02**

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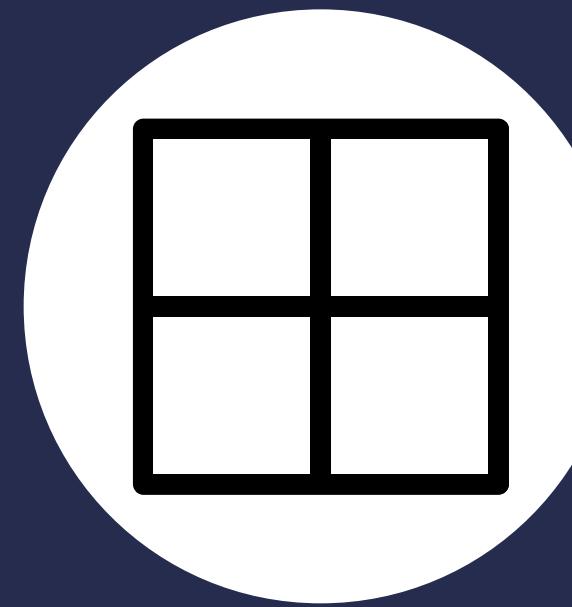
**DATA  
PREPARATION**

# Data Quality Check

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Total 541,909 Data



Total 8 Column



2 Columns with Missing  
Values



136.534 Missing  
Values

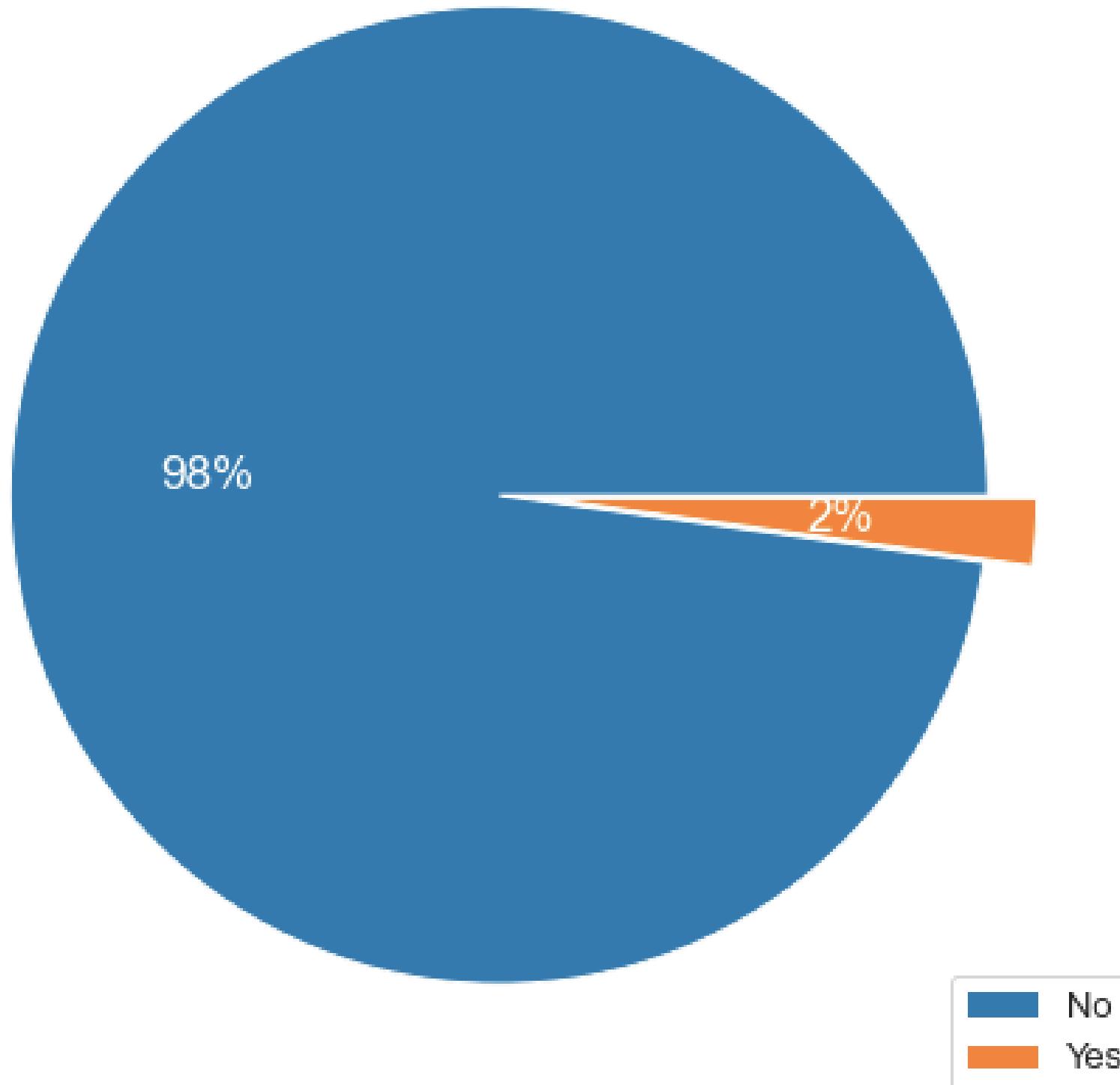


# 03

# ANALYSIS & FINDING



## CANCELLED YES OR NO?



## HOW MANY PEOPLE CANCEL ORDERS?

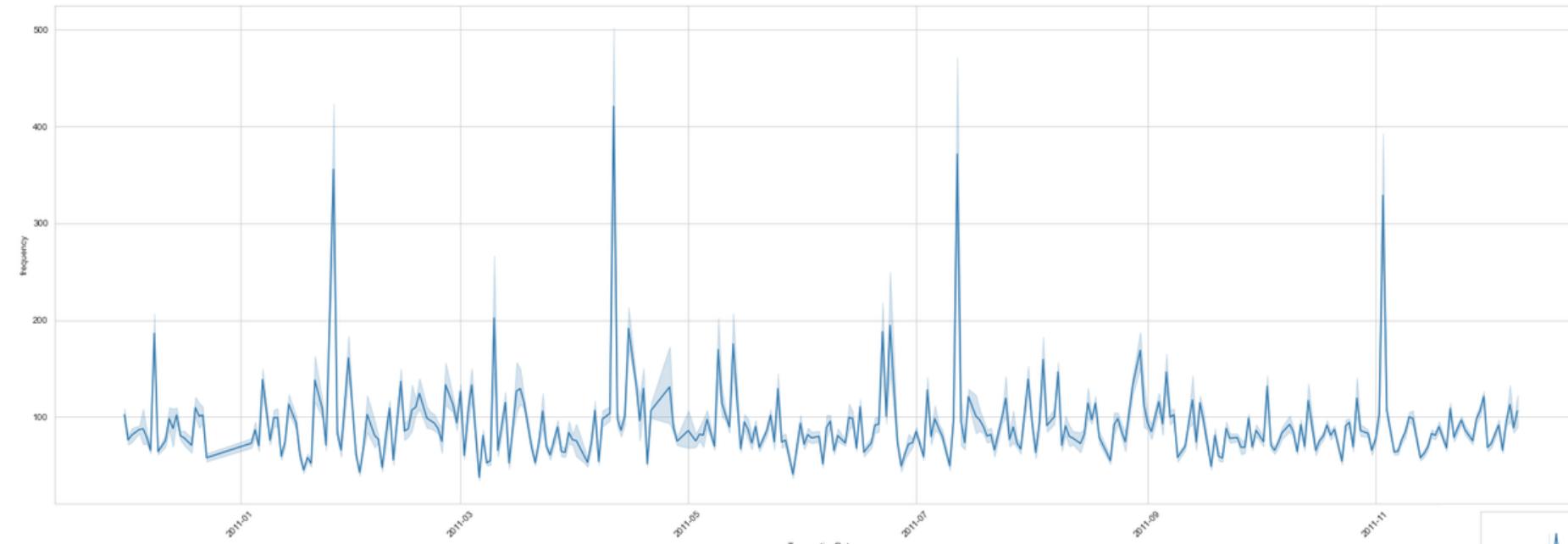
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Through visualization, it can be seen that customers who cancel orders are only 2% of the total data.

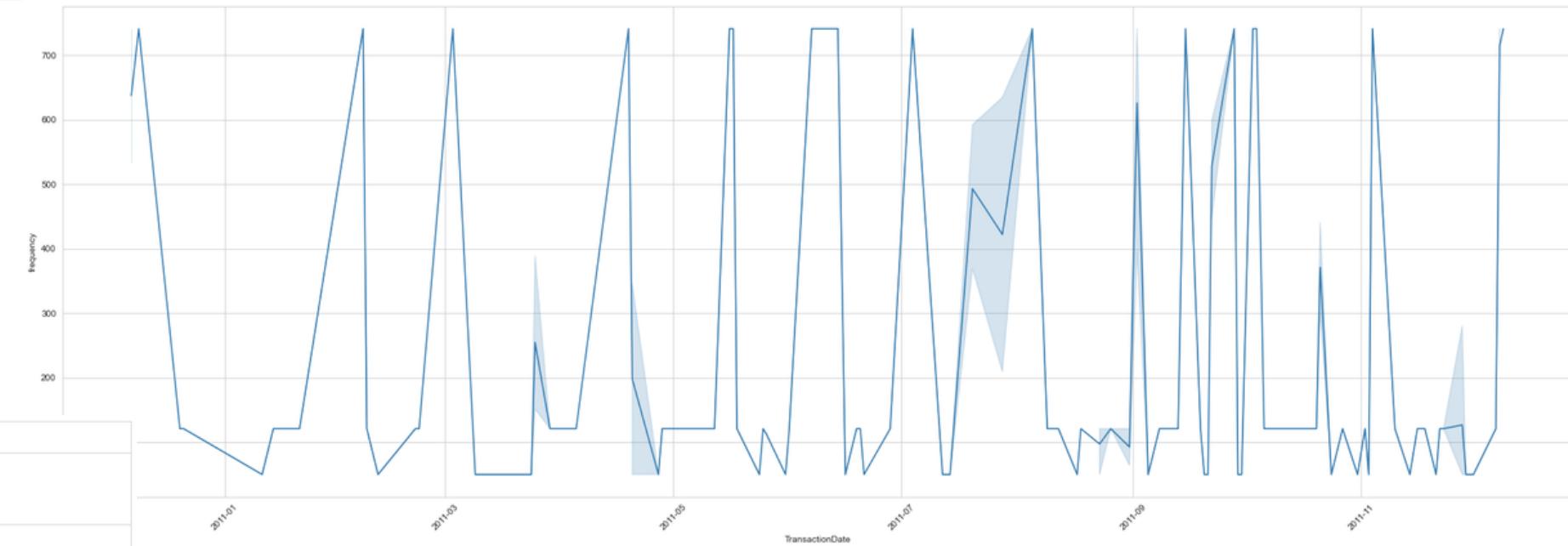
The reason they canceled the order was because they ordered items that were out of stock.

# SALES TREND OVER THE MONTH

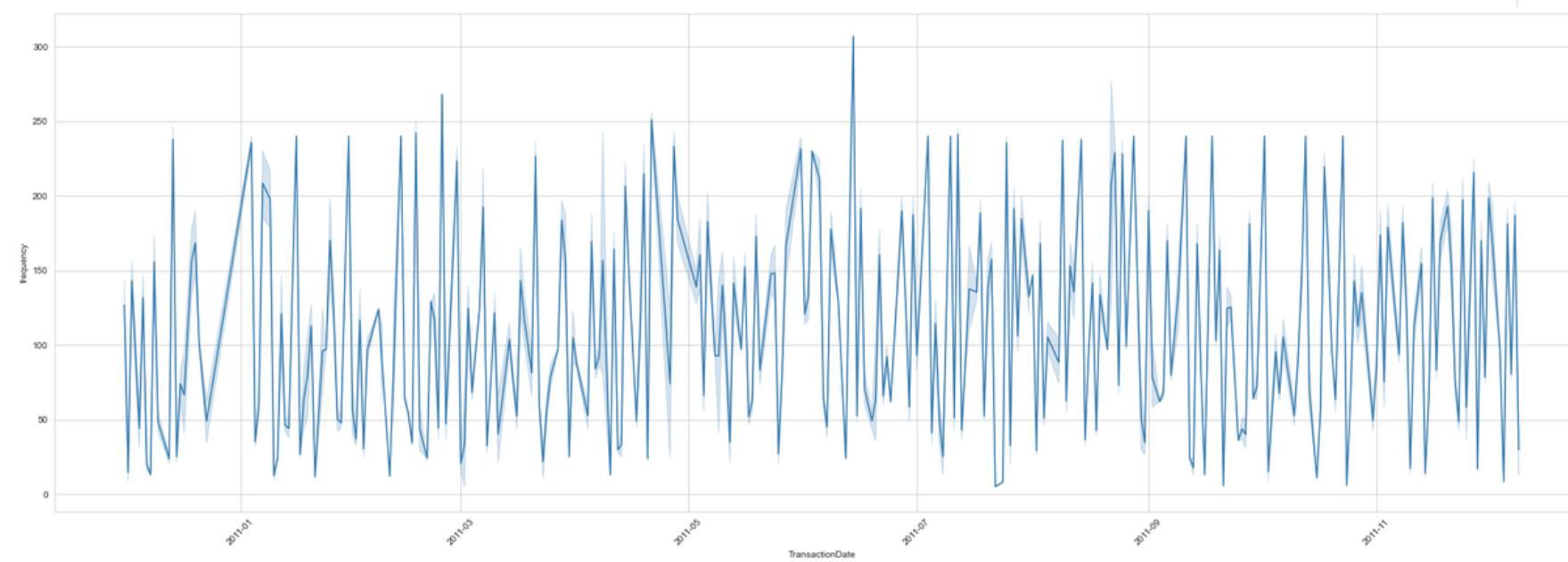
**Cluster 0**



**Cluster 1**

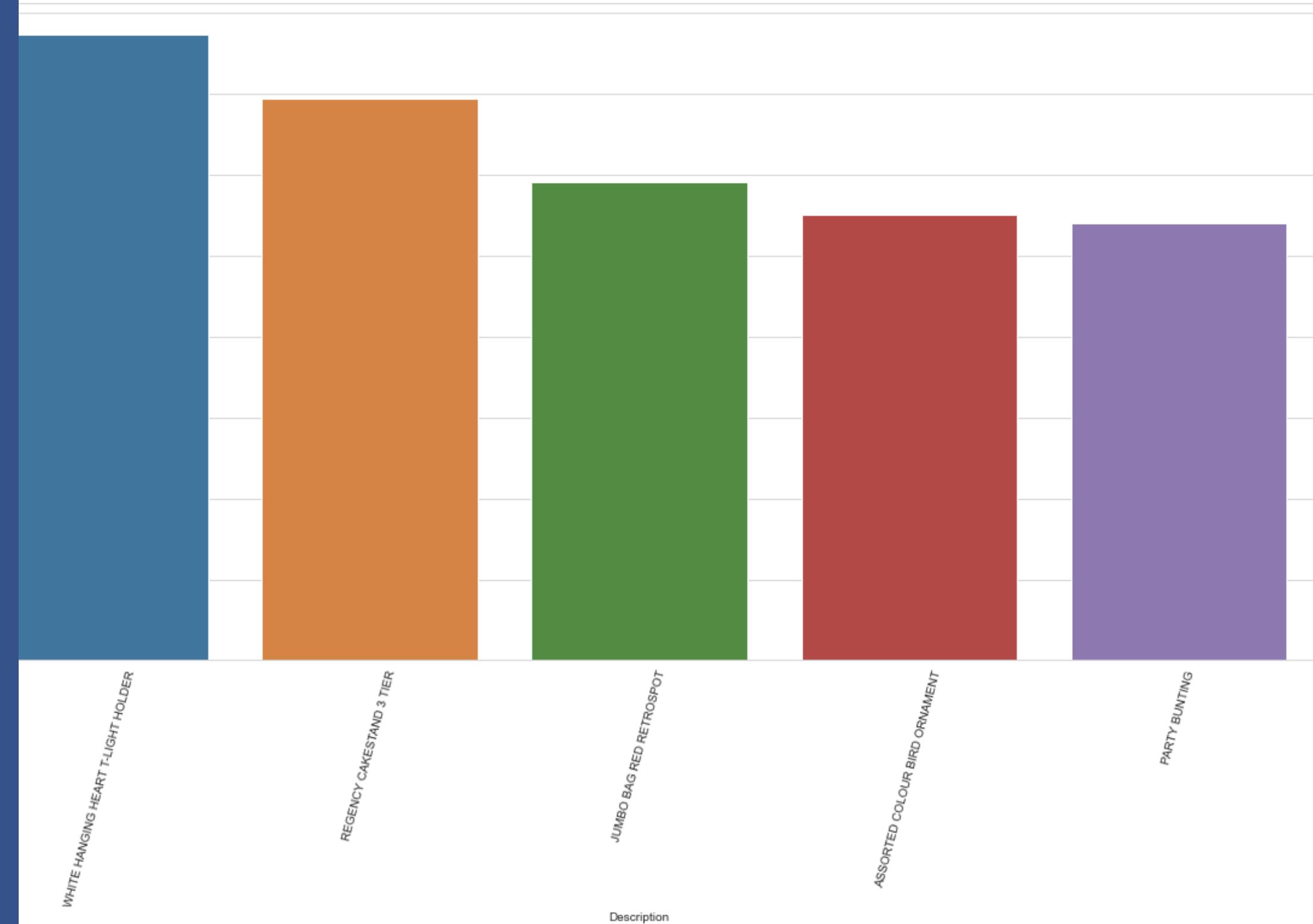


**Cluster 2**

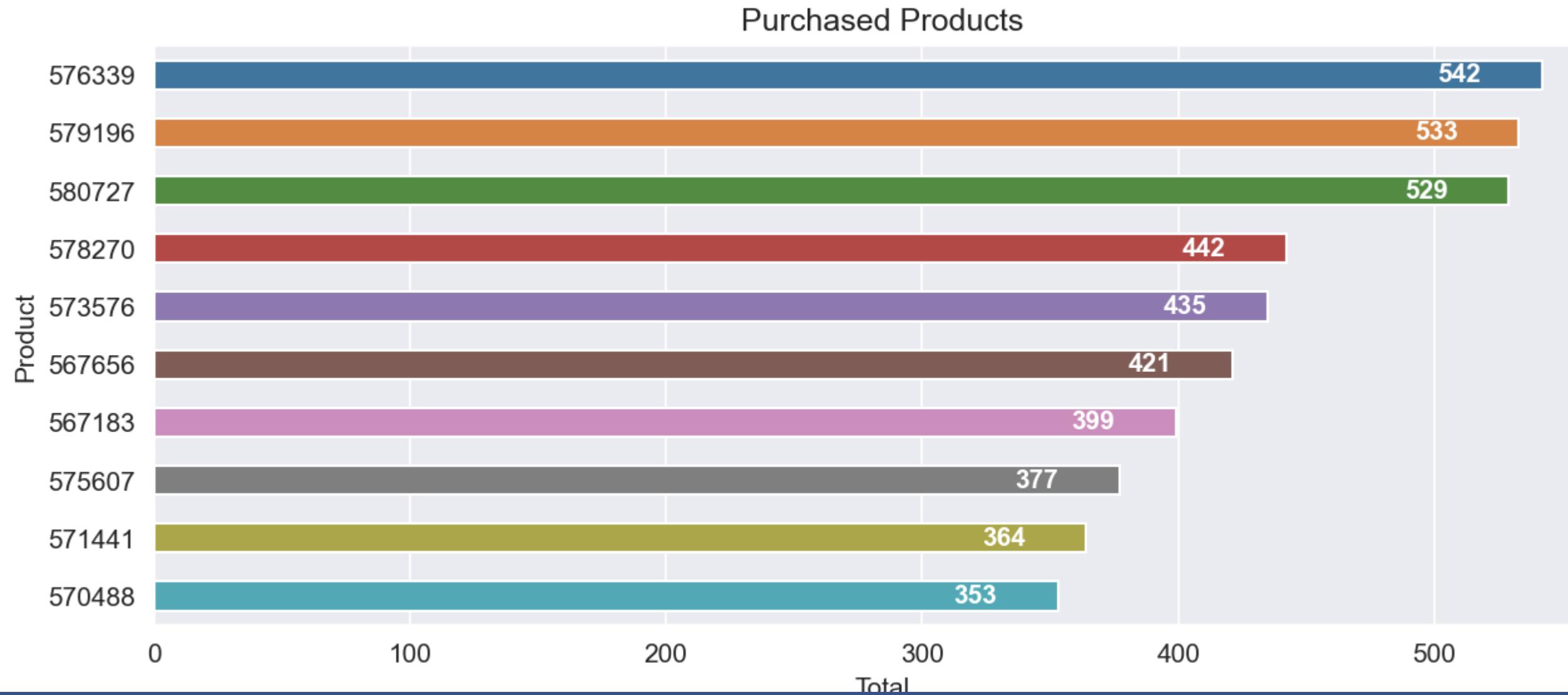


# WHAT ARE THE MOST FREQUENT PURCHASED PRODUCTS?

- With a total of 1933 items sold, the WHITE HANGING HEART T-LIGHT HOLDER is the most popular product in cluster 0. REGENCY CAKESTAND 3 TIER came in second with 1734 item sold.
- In cluster 1, the most frequently purchased item was the SPACEBOY LUNCH BOX with a total of 25 items, followed by the ROUND SNACK BOXES SET OF 4 WOODLAND with a total of 24 items
- In cluster 2, the most frequently purchased items were JUMBO BAG RED RETROSPOT with a total of 171 items sold, followed by REGENCY CAKESTAND 3 TIER with a total of 163 items sold.

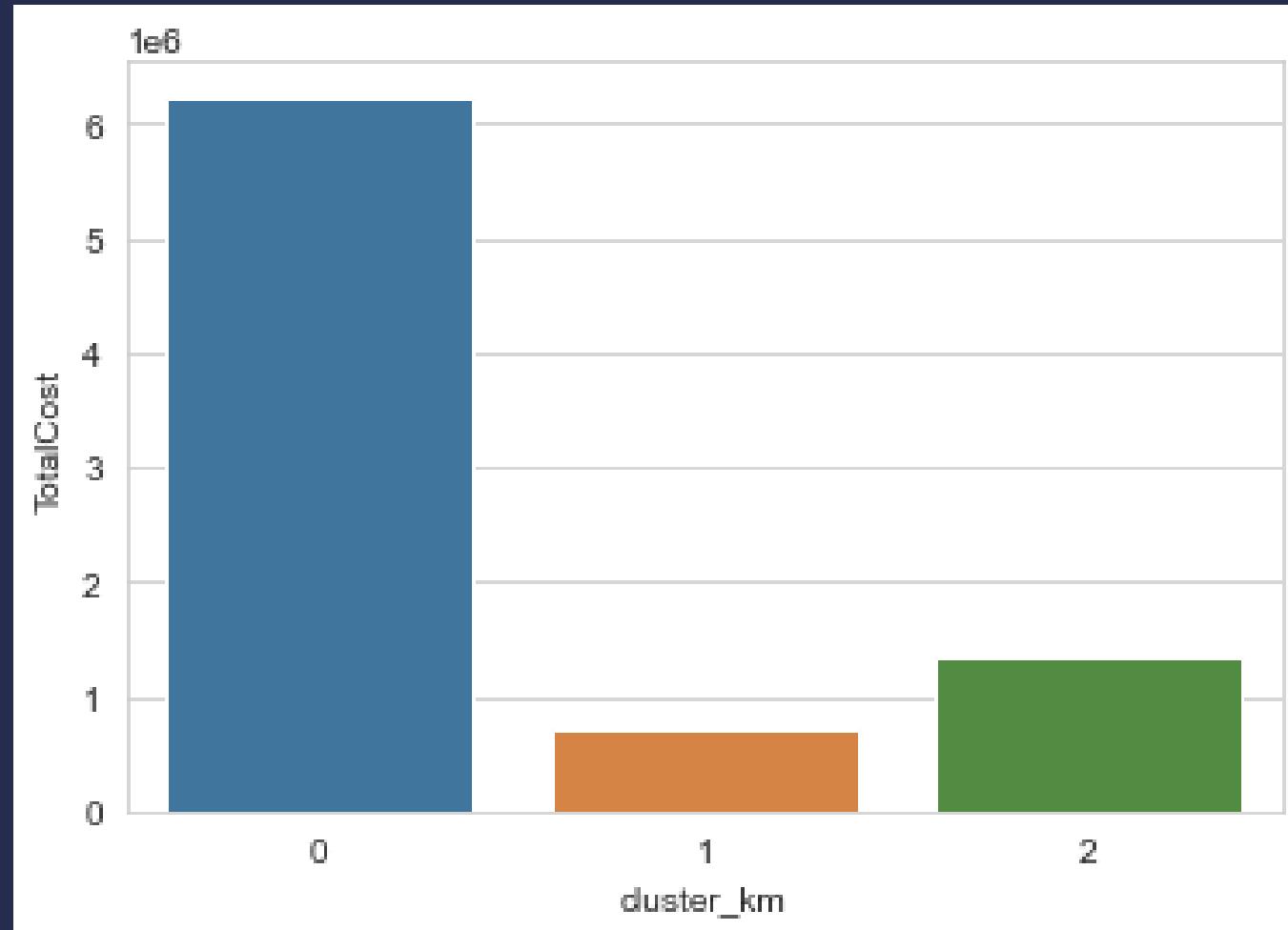


# HOW MANY PRODUCTS DOES THE CUSTOMER PURCHASE IN EACH TRANSACTION?



In Cluster 0, the highest number of products purchased by customers for each transaction is 399.  
In Cluster 1, the highest number of products purchased by customers for each transaction is 125.  
In Cluster 2, the highest number of products purchased by customers for each transaction is 542.

## HOW DOES EACH CLUSTER/GROUP CONTRIBUTE TO THE COMPANY'S REVENUE?



It can be concluded that cluster 0 is the cluster with the highest revenue contribution for the company, with total revenue reaching \$623,302,47839,999.99.

## WHAT ARE THE INTERVAL DATE BETWEEN TRANSACTIONS?

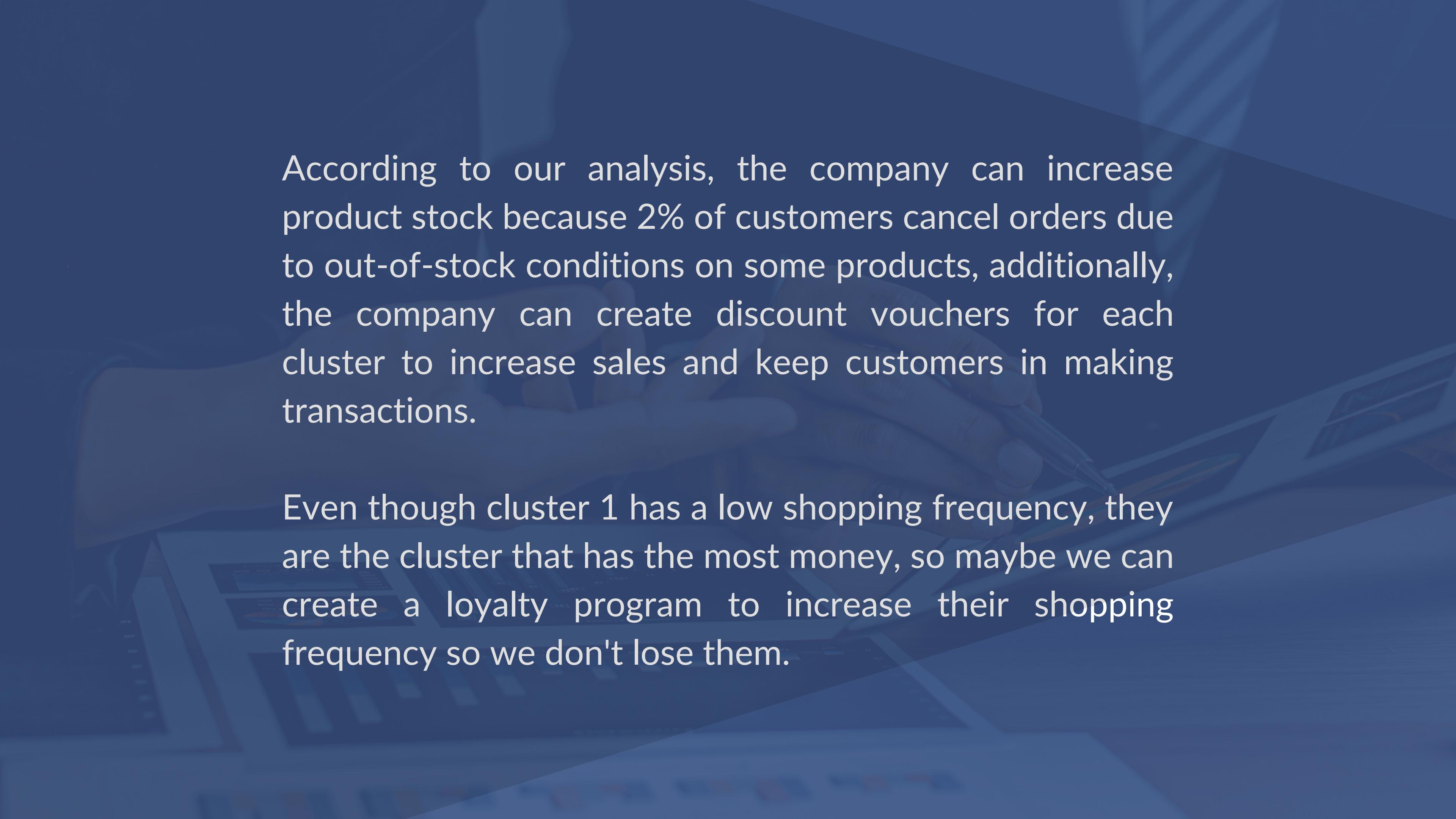
- Interval Cluster 0( Min: 0 Max: 373 )
- Interval Cluster 1( Min: 0 Max: 8 )
- Interval Cluster 2( Min: 0 Max: 38 )

A black and white photograph of a desk. On the desk, there is an open laptop, some papers, and a hand holding a pen over a document. The background is slightly blurred.

## 03

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## SUMMARY & CONCLUSION



According to our analysis, the company can increase product stock because 2% of customers cancel orders due to out-of-stock conditions on some products, additionally, the company can create discount vouchers for each cluster to increase sales and keep customers in making transactions.

Even though cluster 1 has a low shopping frequency, they are the cluster that has the most money, so maybe we can create a loyalty program to increase their shopping frequency so we don't lose them.

A group of five business professionals are gathered around a desk in an office. A man with a beard and a woman in a white blazer are shaking hands. Behind them, another man in a dark sweater is smiling. To the right, a woman with long dark hair and a man with short hair are also smiling. On the desk in front of them are a laptop, a clipboard with papers, and a smartphone. The background shows office windows and shelves.

Thank You