



# **CUSTOMER SEGMENTS & THEIR IMPACT ON BUSINESS PERFORMANCE**

NGUYEN THI LAN THANH

# Table of **CONTENTS**

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**1.ABOUT DATASET**

**2.DATA PROCESSING**

**3.ANALYSIS & RESULT**

**4.RECOMMENDATION**

# 1.About DATASET

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This dataset contains sales transaction records for an electronics company over a one-year period, spanning from September 2023 to September 2024. It includes detailed information about customer demographics, product types, and purchase behaviors.

Source: [Kaggle](#)

Data: 20,000 rows x 16 columns

## **Context:**

You are a Data Analyst at company.

Reporting to: Marketing and Sales Department.

## **Objective:**

**Analyze customer segment characteristics** and evaluate the **impact** of each group **on revenue and customer satisfaction**. Additionally, analyze the characteristics of churned customers and provide actionable recommendations **to reduce the churn rate and enhance the overall customer experience**.

# DATA DICTIONARY

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| Column Name       | Description                                                                           |
|-------------------|---------------------------------------------------------------------------------------|
| Customer ID       | Unique identifier for each customer.                                                  |
| Age               | Age of the customer (numeric)                                                         |
| Gender            | Gender of the customer (Male or Female)                                               |
| Loyalty Member    | (Yes/No) (Values change by time, so pay attention to who cancelled and who signed up) |
| Product Type      | Type of electronic product sold (e.g., Smartphone, Laptop, Tablet)                    |
| SKU               | a unique code for each product.                                                       |
| Rating            | Customer rating of the product (1-5 stars) (Should have no Null Ratings)              |
| Order Status      | Status of the order (Completed, Cancelled)                                            |
| Payment Method    | Method used for payment (e.g., Cash, Credit Card, Paypal)                             |
| Total Price       | Total price of the transaction (numeric)                                              |
| Unit Price        | Price per unit of the product (numeric)                                               |
| Quantity          | Number of units purchased (numeric)                                                   |
| Purchase Date     | Date of the purchase (format: YYYY-MM-DD)                                             |
| Shipping Type     | Type of shipping chosen (e.g., Standard, Overnight, Express)                          |
| Add-ons Purchased | List of any additional items purchased (e.g., Accessories, Extended Warranty)         |
| Add-on Total      | Total price of add-ons purchased (numeric)                                            |

## 2.DATA PROCESSING

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Python



SQL



Power BI

**Data Preparation, Data cleaning, Analysis, Visualize the data and building Dashboard**

# **3. ANALYZE & RESULT**

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# OVERVIEW

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20,000

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Total Orders

13,431

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Total Order  
Completed

6,568

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Total Order Cancelled

It can be seen that the number of completed orders is only 13,431 (67.16%), while the number of cancelled orders is 6,568 (32.84%).  
→ **The cancellation rate is too high and needs to be improved.**  
→ **Analyze completed orders and customer segments to build appropriate business strategies**

# SEGMENTATION

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| Segmentation          | Activity/Description                                                                    |
|-----------------------|-----------------------------------------------------------------------------------------|
| Best customers        | Recently purchased, order frequently, and spend the most.                               |
| Loyal                 | Frequently place orders. Engage with promotional programs.                              |
| Potential Loyalist    | Recently purchased and spent a good amount.                                             |
| Promising             | Previously loyal, spent often and a considerable amount. Last purchase was a while ago. |
| New Customers         | New customers.                                                                          |
| Needs Attention       | Last purchase was more than a month ago.                                                |
| About to Sleep        | Average customers who haven't bought for a while.                                       |
| At Risk               | Similar to "Can't lose them" but with lower spending and frequency.                     |
| Can't Lose Them       | Used to make large and frequent purchases, but haven't returned recently.               |
| Hibernating Customers | Last purchase was a long time ago.                                                      |
| Lost Customers        | Last purchase was quite a while ago, low frequency and spending.                        |

# OVERVIEW OF COMPLETED ORDERS

Total Revenue

43.46M

Average Revenue

3.24K

Total Customer

9465

Average Rating

3.10

Quantity

74K

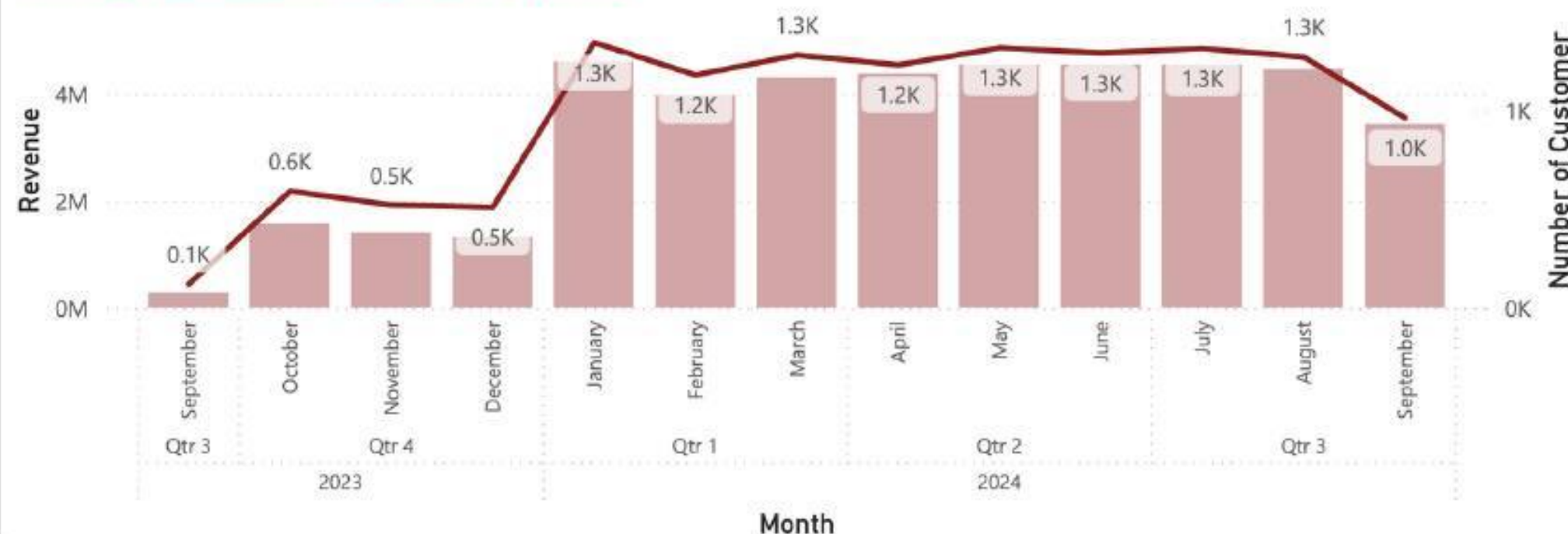
Product Type

All

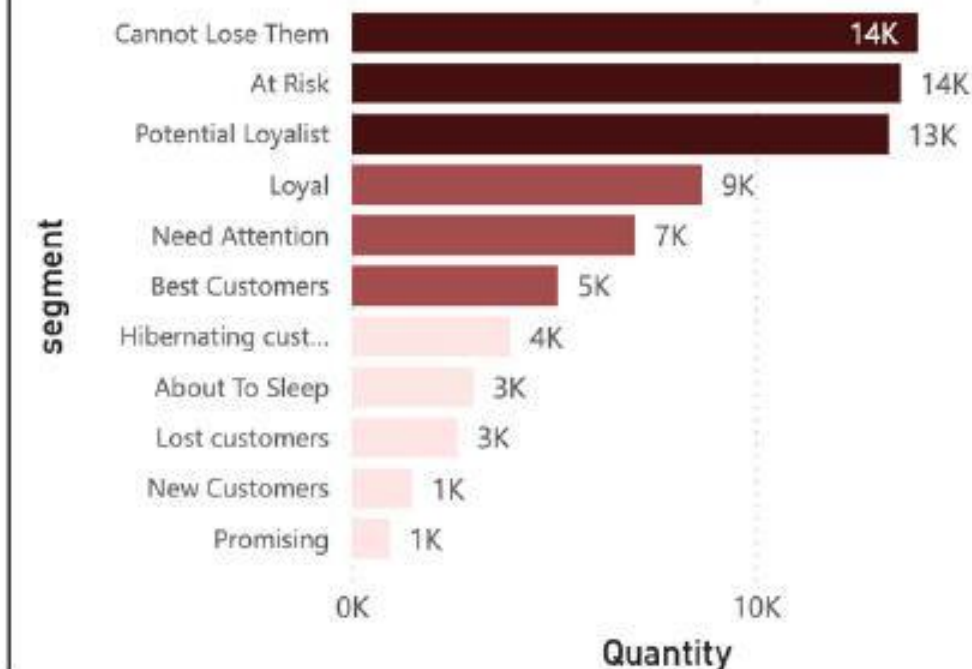
Shipping Type

All

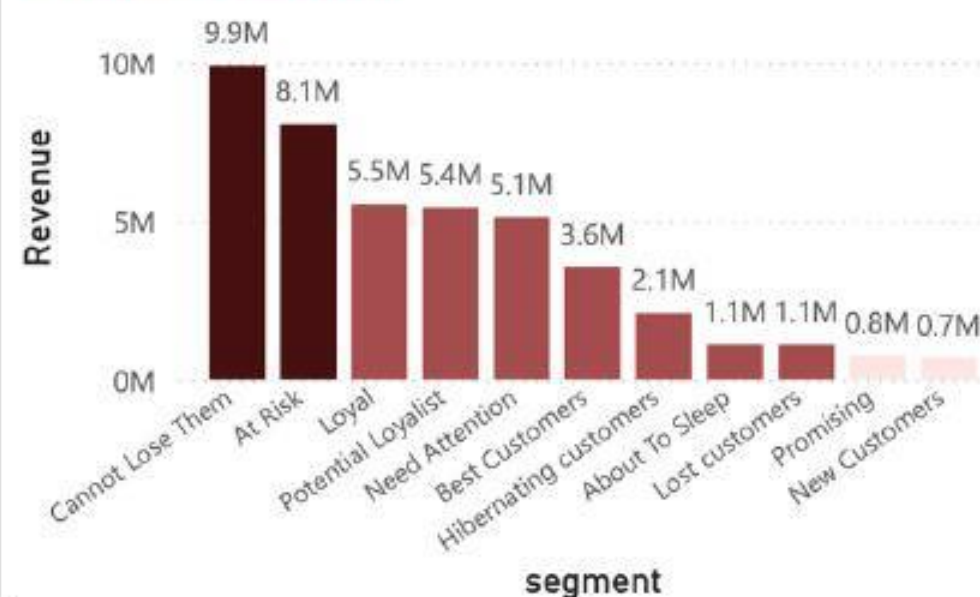
Revenue and Number of Customer by Time



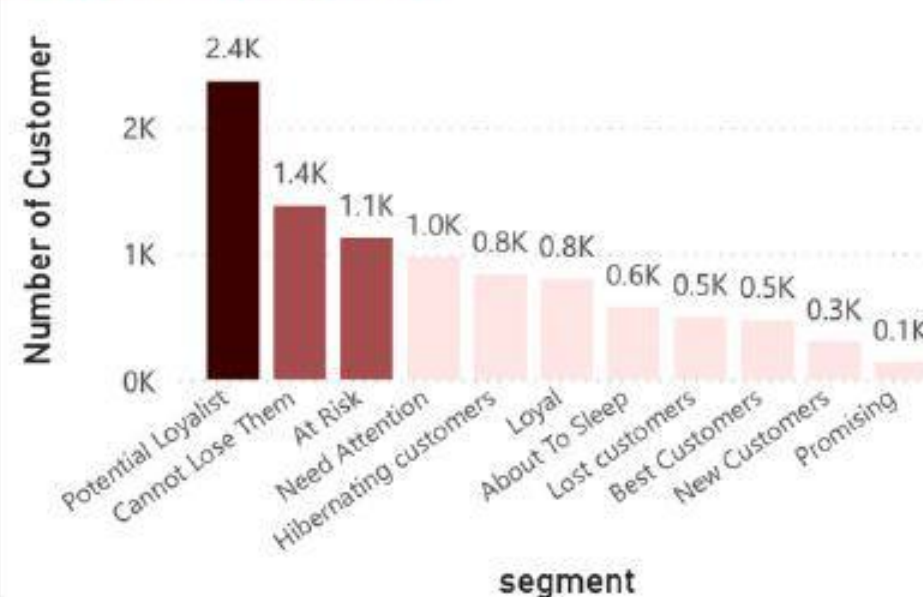
Quantity by Segment



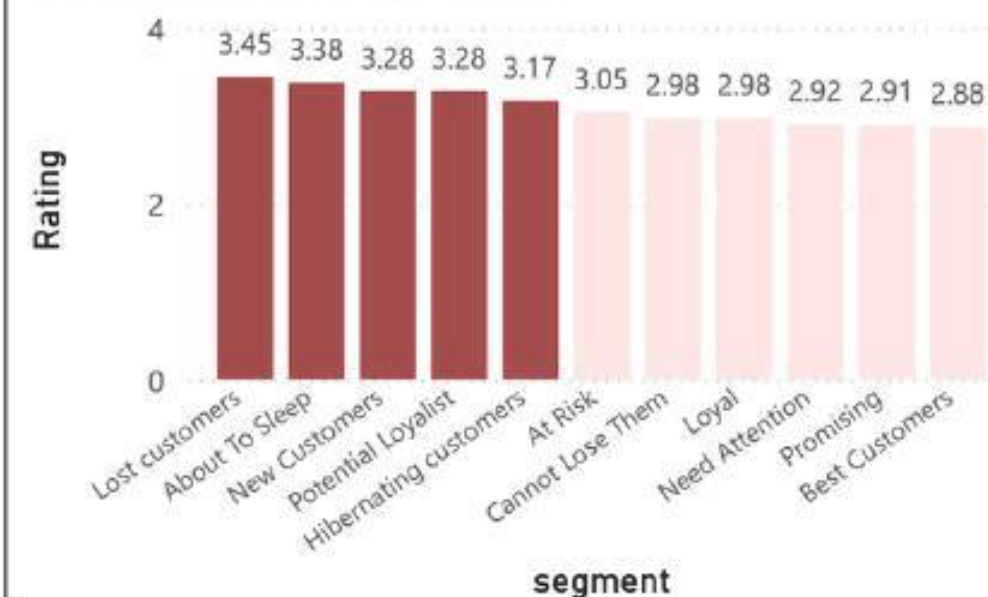
Revenue by Segment



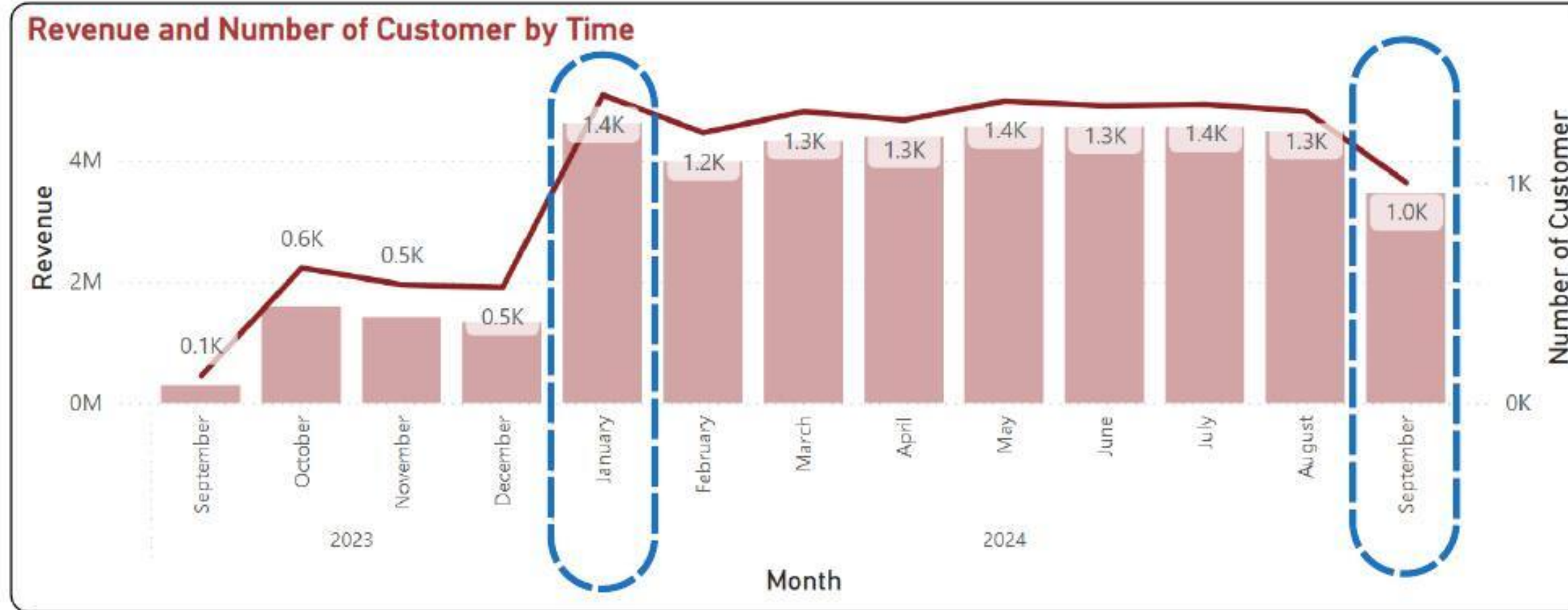
Customer by Segment



Average Rating by Segment



## OVERVIEW OF COMPLETED ORDERS



**1. Initial Growth Phase (09/2023 – 01/2024):** The number of customers **increased sharply**, and revenue also surged significantly.

→ This was a **breakout phase**, likely driven by an effective marketing campaign, the launch of new products/services, or attractive promotions during the New Year shopping season.

**2. Stable and Sustained Phase (02/2024 – 08/2024):** **Customer volume remained stable**, and **revenue** consistently **stayed high** (~3.5–4M).

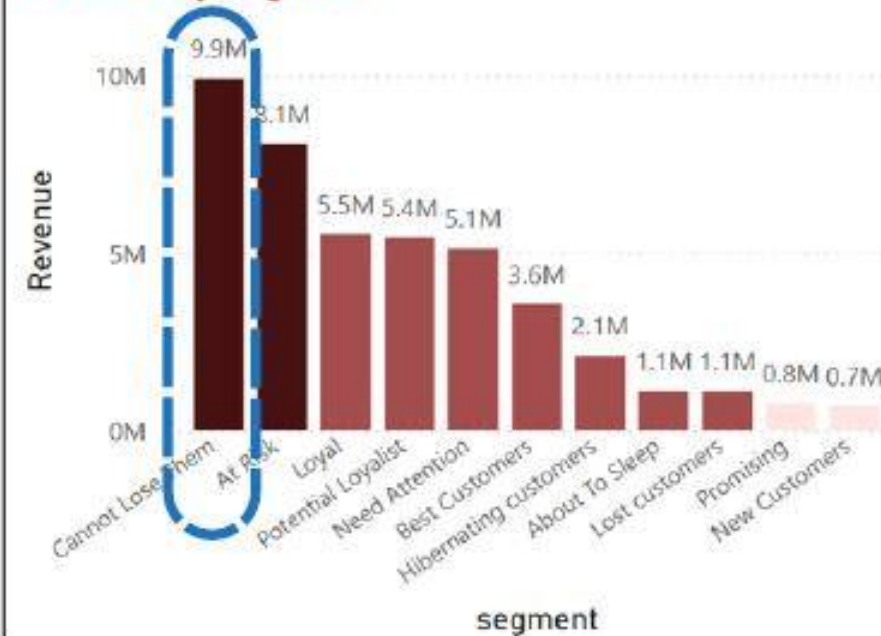
→ The high revenue level was well **maintained**, indicating effective customer retention. However, there were no signs of further strong growth.

**3. Decline Phase (09/2024):** A significant **drop in customer** volume occurred, accompanied by a corresponding **decline in revenue**.

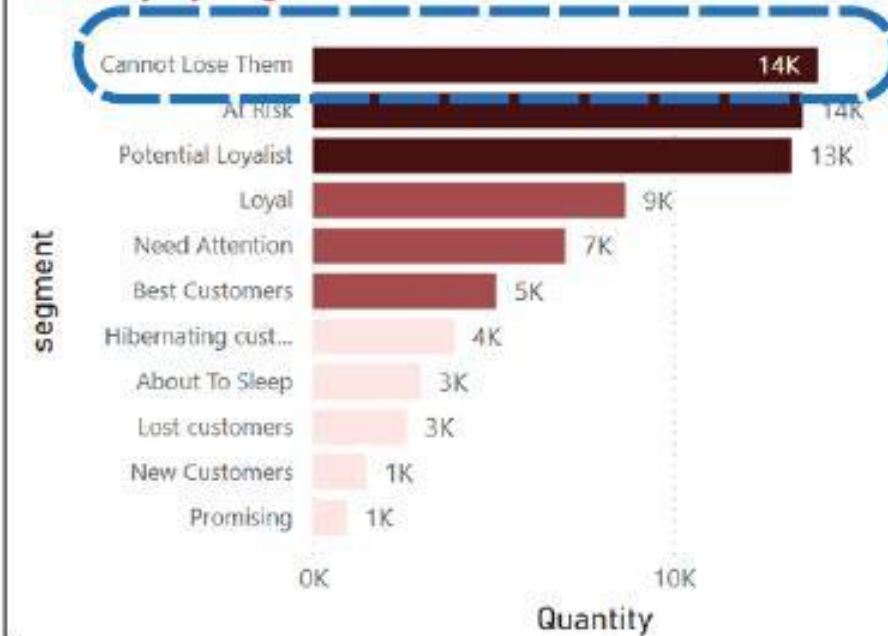
→ This is a warning sign, potentially caused by: A decline in market demand, **loss** of customers to competitors, **reduced** effectiveness of marketing efforts or issues with product/service quality

# OVERVIEW OF COMPLETED ORDERS

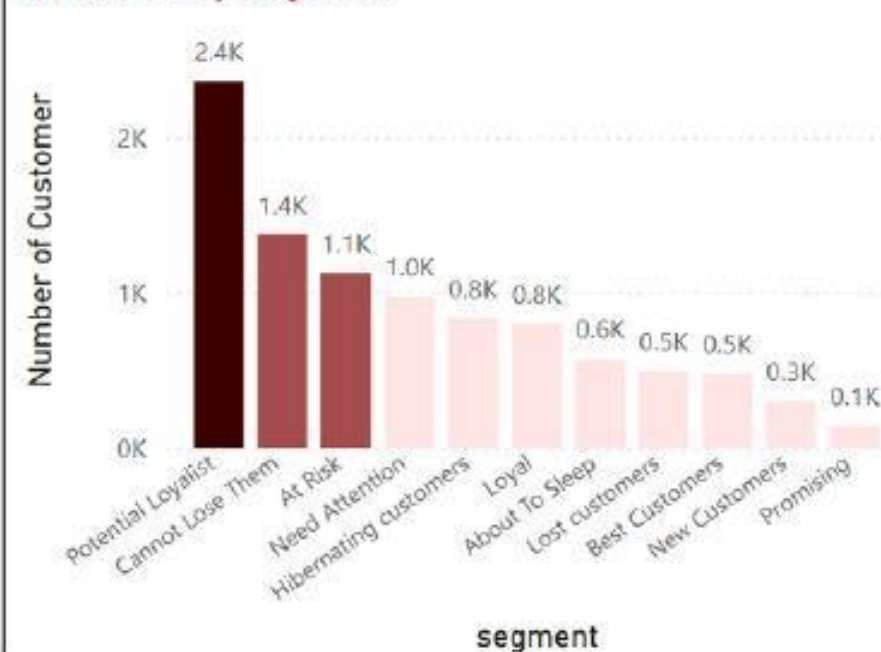
Revenue by Segment



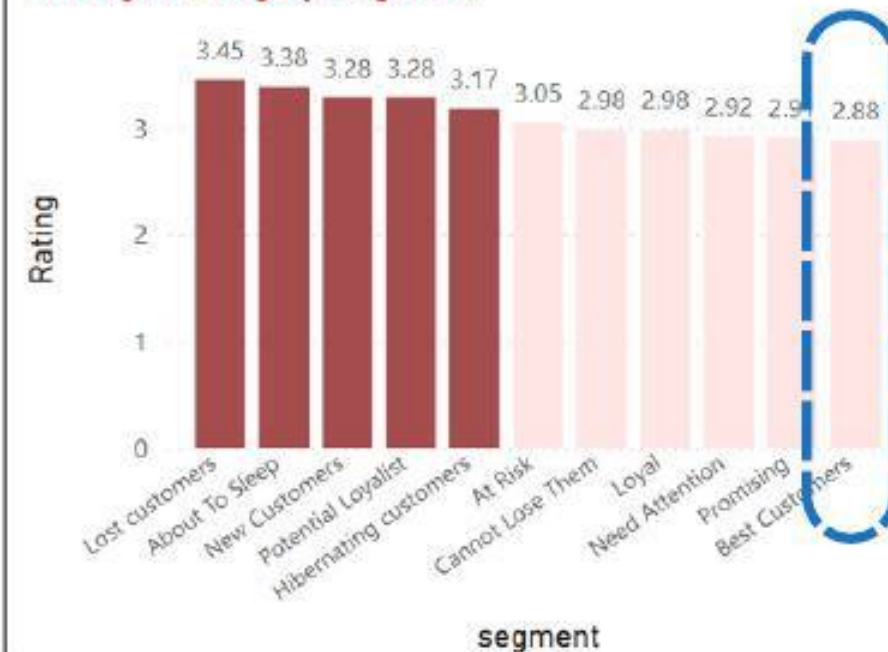
Quantity by Segment



Customer by Segment



Average Rating by Segment



- **“Cannot Lose Them”**: High revenue contribution and frequent purchases, but only average ratings → Improve customer experience.
- **“At Risk”**: High revenue, low ratings → Risk of churn, requires immediate retention actions.
- **“Potential Loyalist”**: Loyalty potential, decent revenue → Should be nurtured into Best customers.
- **“Loyal”**: Truly loyal, high revenue → Maintain care and improve their experience.
- **“Best Customers”**: Lowest rating (2.88), average revenue → Not as effective as the label suggests, needs survey and re-evaluation.
- **Other Segments:**
  - “Need Attention”**: 5.1M in revenue – risk of churn if not properly engaged.
  - “Hibernating”, “About to Sleep”, “Lost”**: Low interaction but high ratings → Potential for reactivation.

→ The **“Can't Lose Them”** group significantly impacts revenue and quantity, while the **“Best Customers”** group underperforms its name. Both are **key segments** requiring **deeper analysis** for targeted strategies.

## THE "BEST CUSTOMER" SEGMENTATION

Total Revenue

3.56M

Total Customer

477

Average Revenue

4.29K

Average Rating

2.88

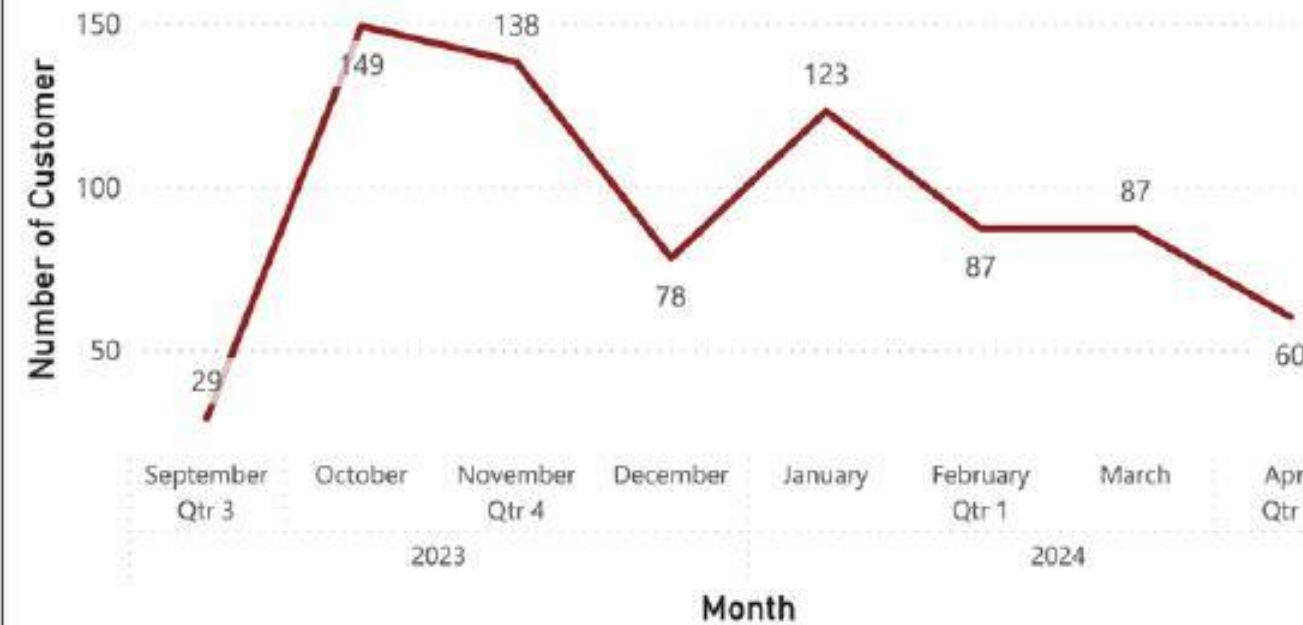
Quantity

5099

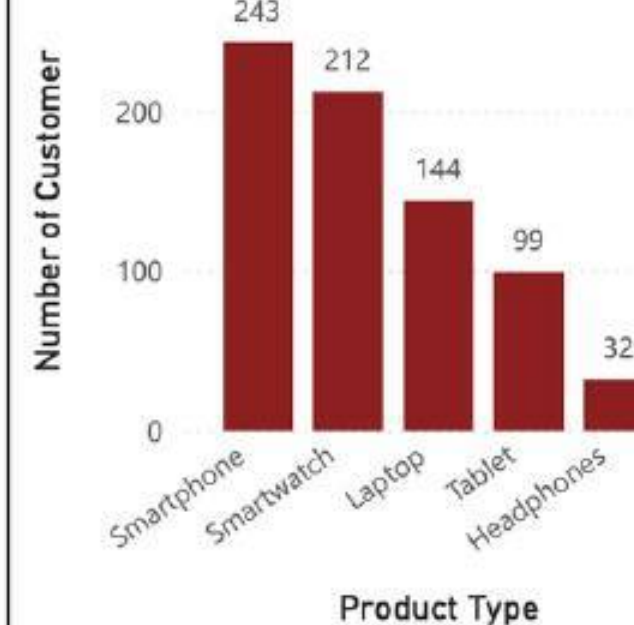
Segment

Best Customers

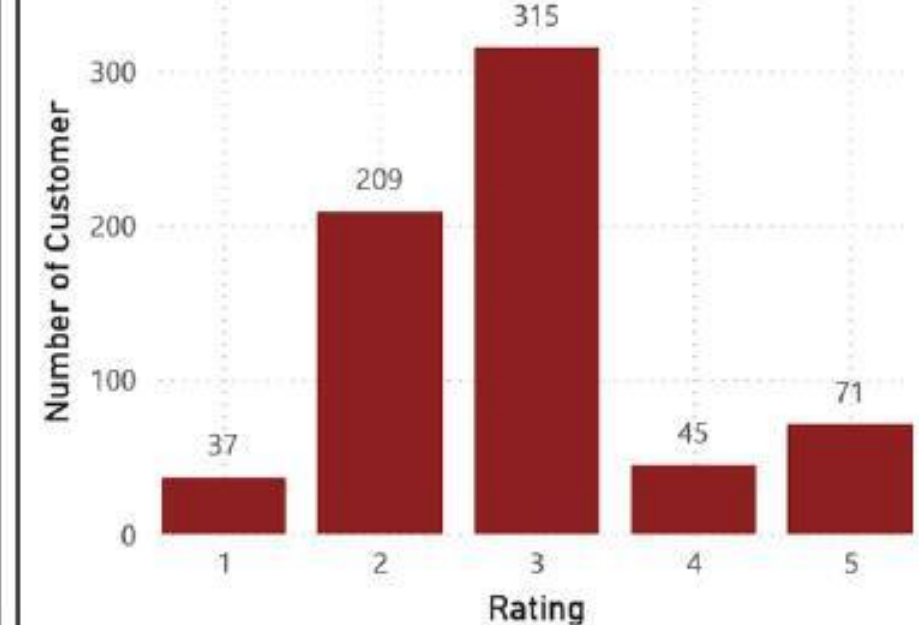
### "Best Customers" by Time



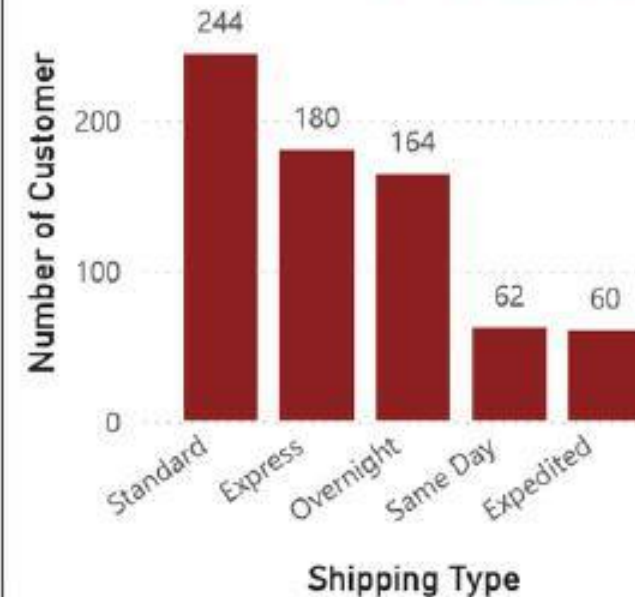
### "Best Customers" by Product Type



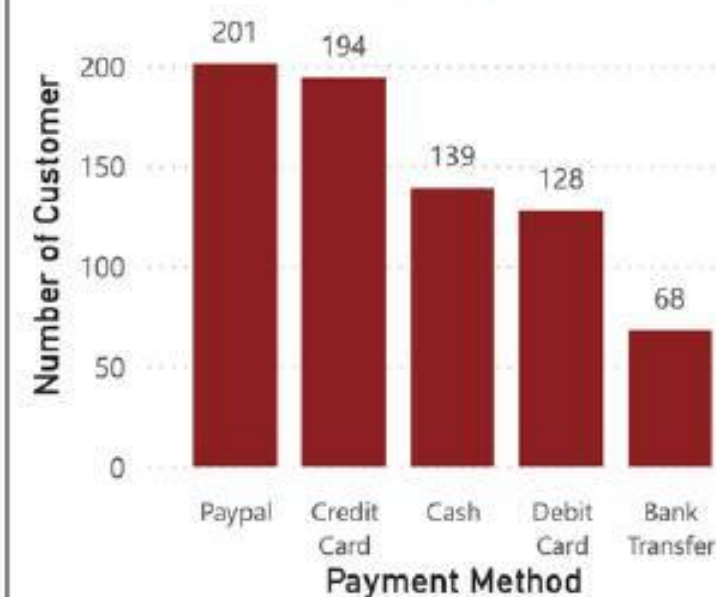
### "Best Customers" by Rating



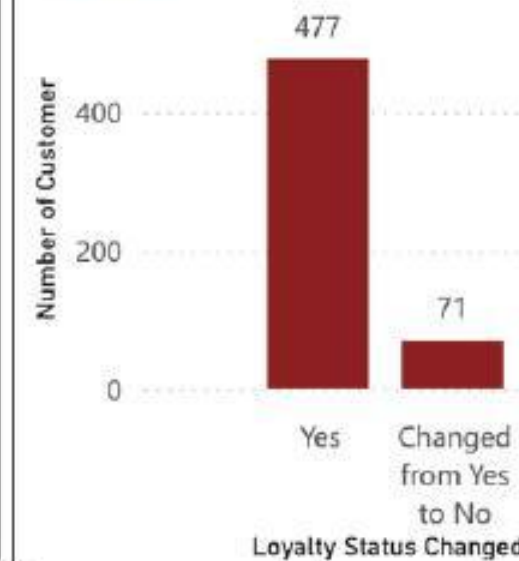
### "Best Customers" by Shipping Type



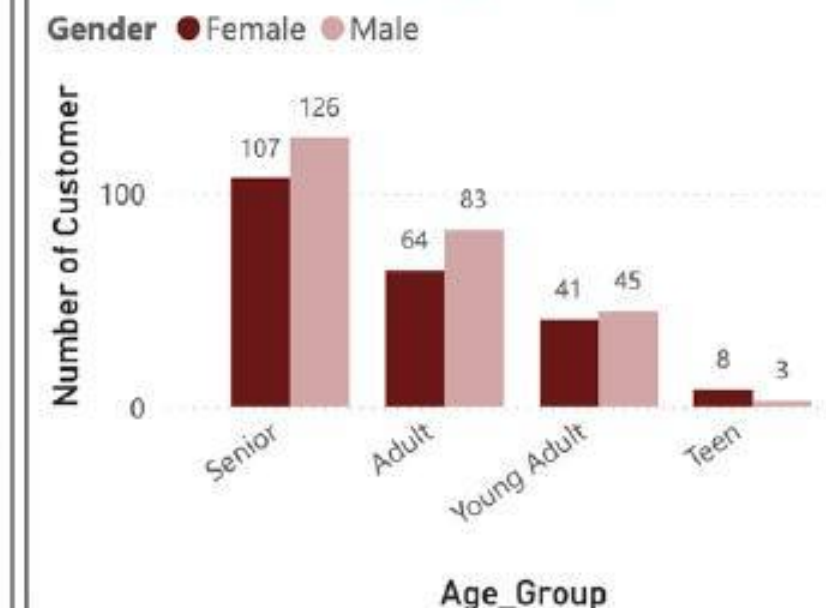
### "Best Customers" by Payment Method



### "Best Customers" by Loyalty Member



### "Best Customers" by Age Group



## THE “BEST CUSTOMER” SEGMENTATION

Total Revenue

3.56M

Total Customer

477

Average Revenue

4.29K

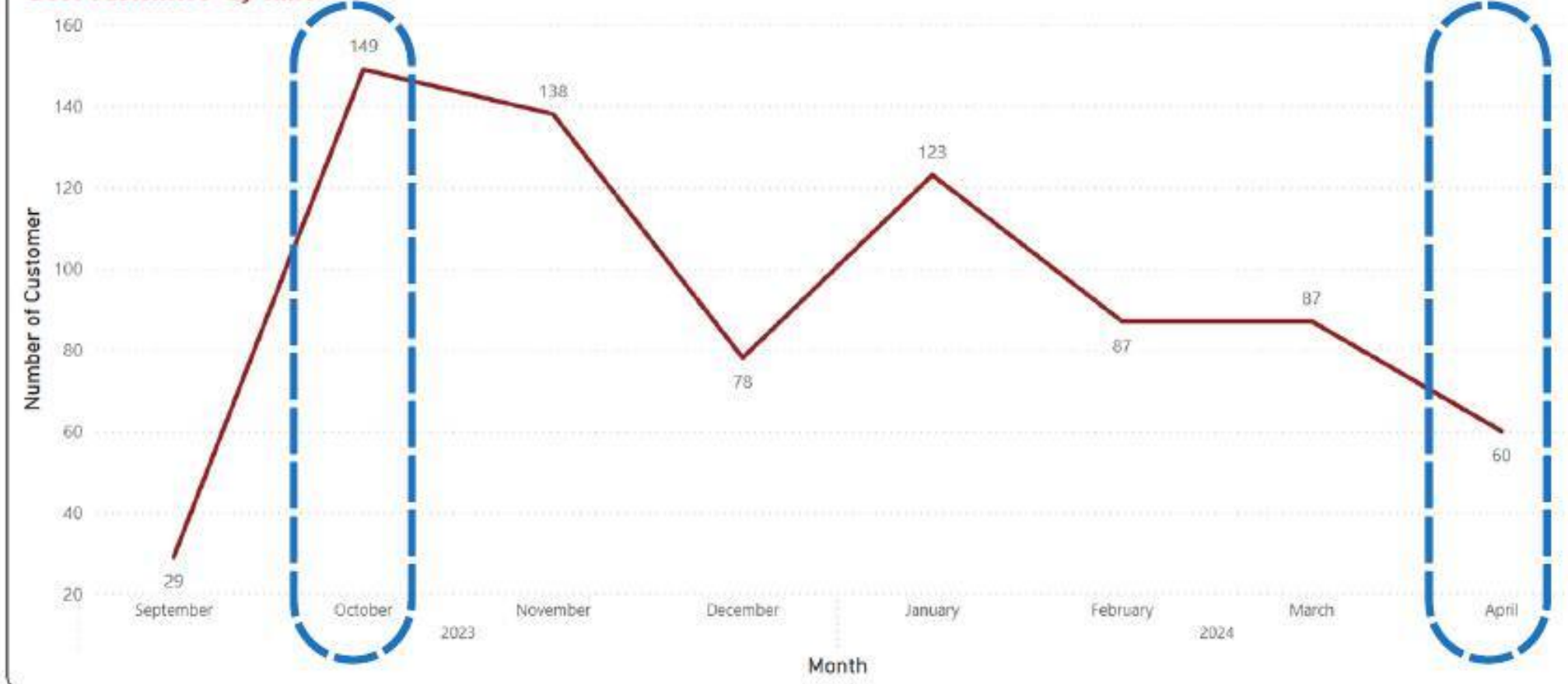
Average Rating

2.88

Quantity

5099

"Best Customers" by Time



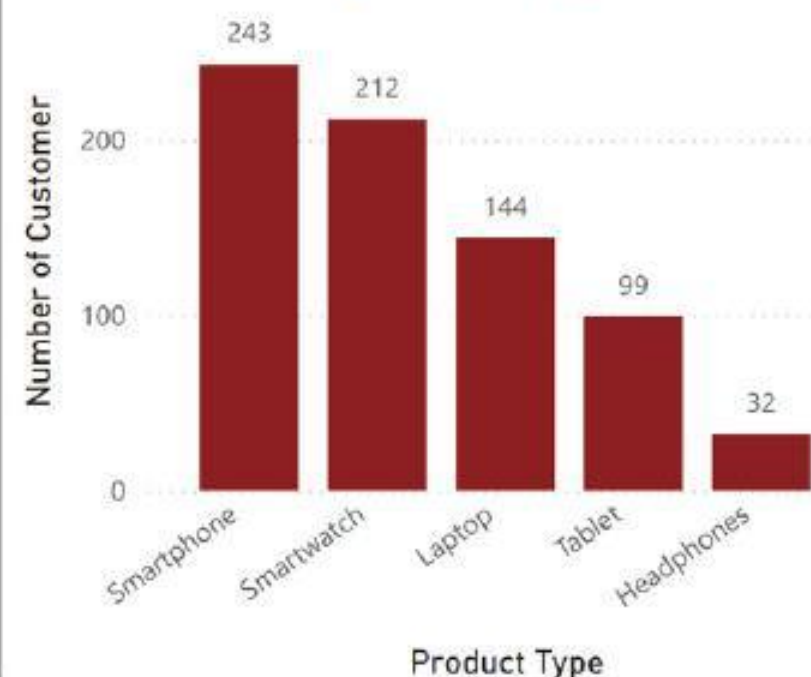
### Overview of the “Best Customers” Segment

- Total Revenue: \$3.56M – average among all segments
- Average **Rating**: 2.88 – the **lowest** across all groups
  - Possibly due to **dissatisfaction** with the product or service
  - Even the most loyal or highest-spending customers are at **risk of leaving**
- The number of customers **surged** from 29 in September to 149 in **October 2023 (an increase of 413%)**, peaking that month.
- It then **steadily declined** to just 60 by April 2024 (**a 60% decrease**).

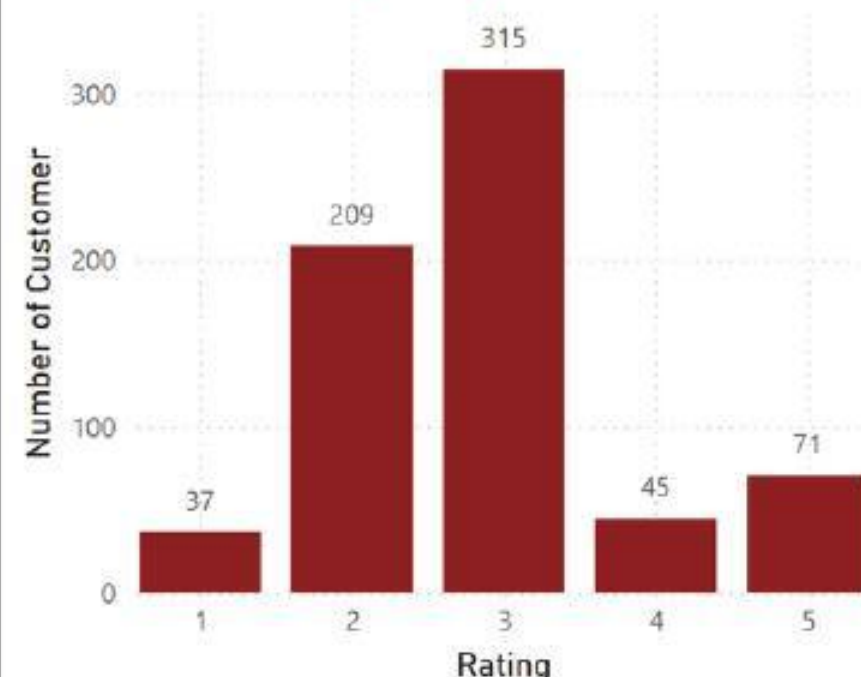
- This indicates a significant drop in customer interest or satisfaction.
- Customer count in this group decreased over time and completely disappeared starting May 2024.

## THE "BEST CUSTOMER" SEGMENTATION

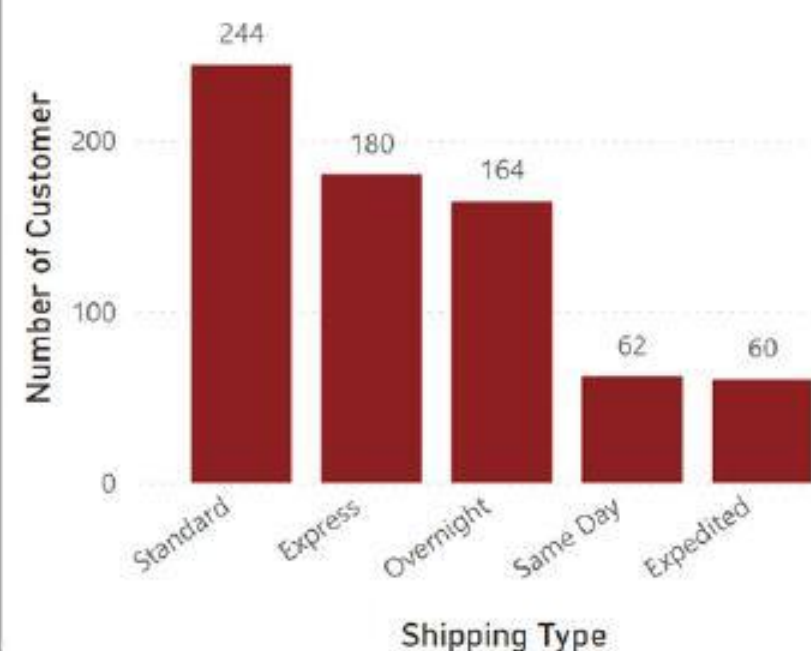
"Best Customers" by Product Type



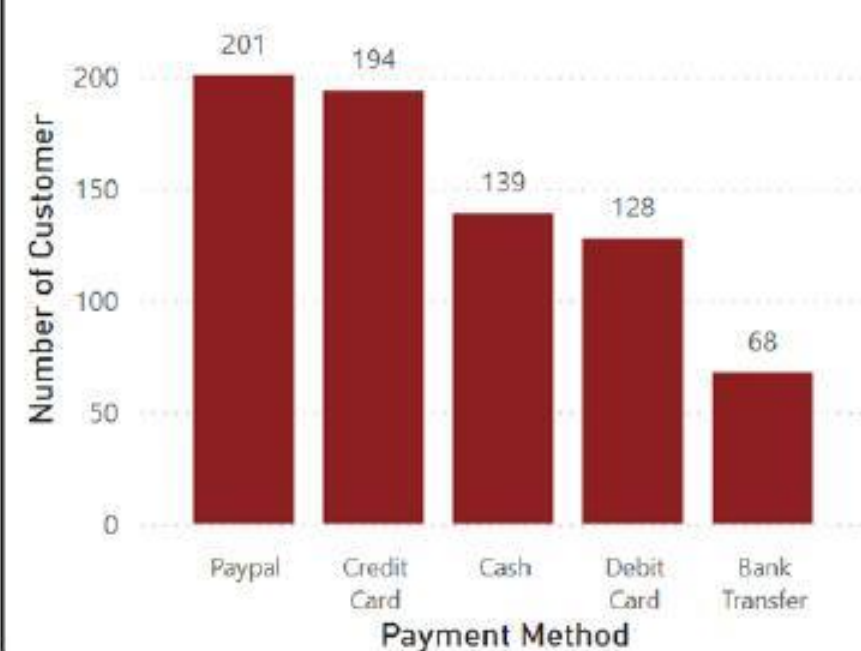
"Best Customers" by Rating



"Best Customers" by Shipping Type

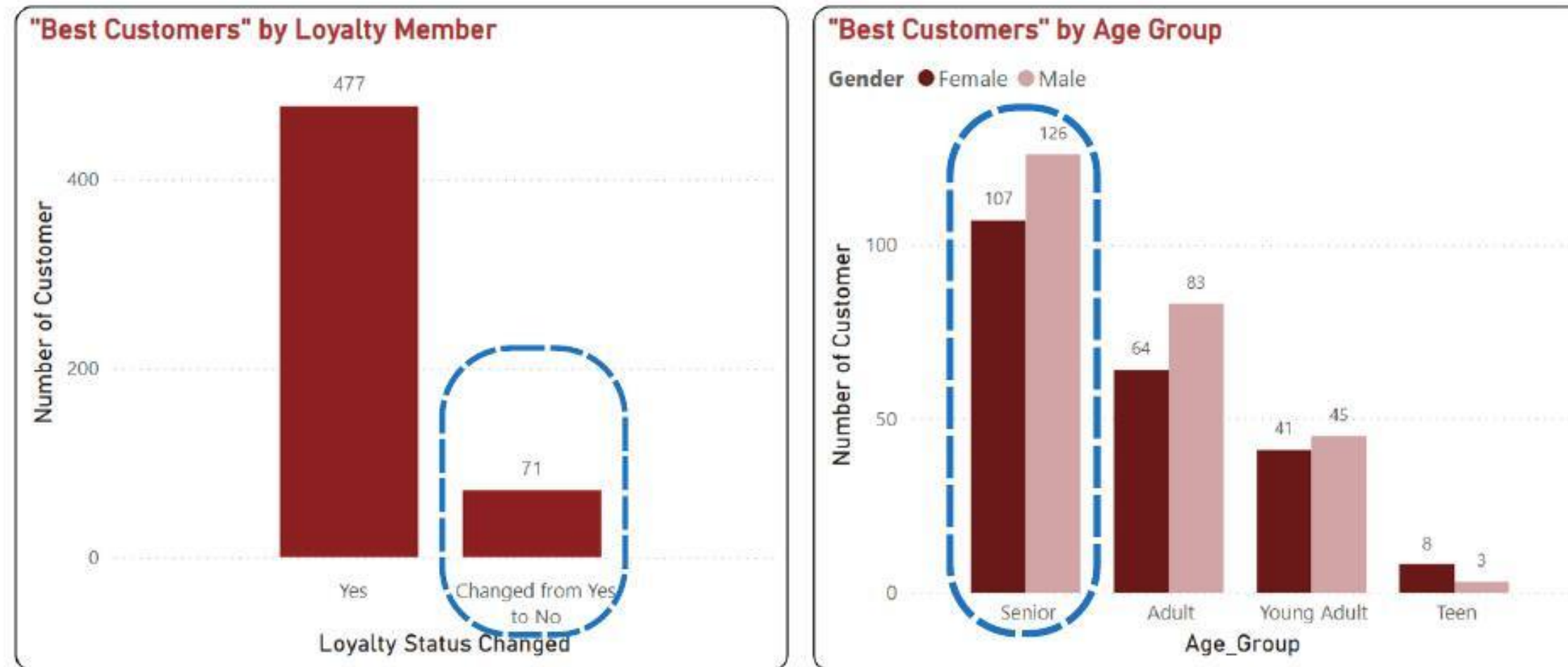


"Best Customers" by Payment Method



- **Product Type:** Most bought: Smartphones (243), Smartwatches (212). Few bought: Headphones (32)  
→ Preference for high-end tech products
- **Rating:** Mostly rated 3 stars (315) or 2 stars (209); only 71 customers gave 5 stars  
→ Product/service doesn't meet expectations
- **Shipping Type:** Standard is preferred (244); Same Day/Expedited less used (60–62)  
→ Possibly low urgency or poor express service  
→ Are other shipping options too expensive or not meeting expectations?
- **Payment Method:** Mostly use PayPal (201) and Credit Cards (194)  
→ Modern, online-savvy shoppers

## THE "BEST CUSTOMER" SEGMENTATION



- **Loyalty Member:** All customers have registered for membership, but many customers (71) do not use their membership when purchasing  
→ The loyalty program may **lack appeal**, or the membership payment process may be **overly complicated or time-consuming**.
- **Age & Gender:** Mostly Seniors and Adults; Teens minimal. Men dominate across age groups  
→ **Older**, high-spending **male customers** (Customers who are **busy** with work and family, **need speed and convenience**)

- The "Best Customer" segment had a high average revenue, but after experiencing the product or service, they became dissatisfied (as reflected in low ratings) and eventually churned.
- Since May 2024, there have been no customers remaining in the "Best Customer" segment.

# THE "CAN'T LOSE THEM" SEGMENTATION

Total Revenue

9.91M

Total Customer

1377

Average Revenue

4.23K

Average Rating

2.98

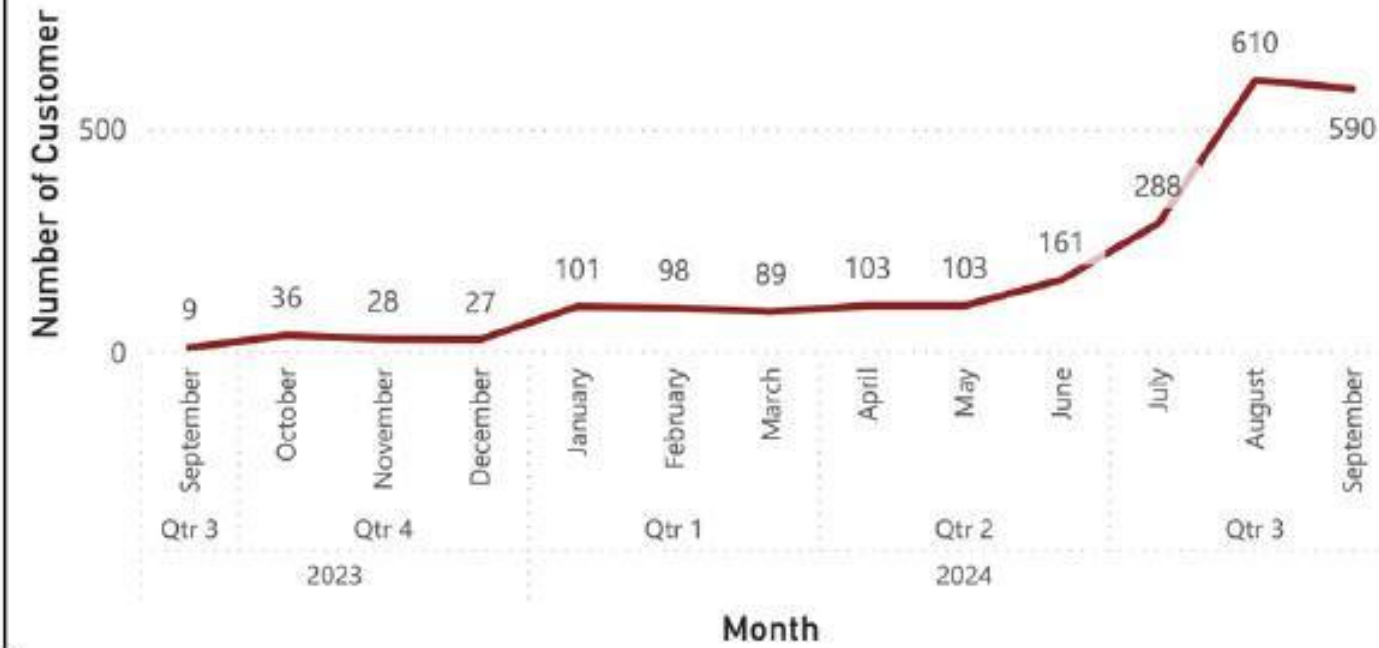
Quantity

14K

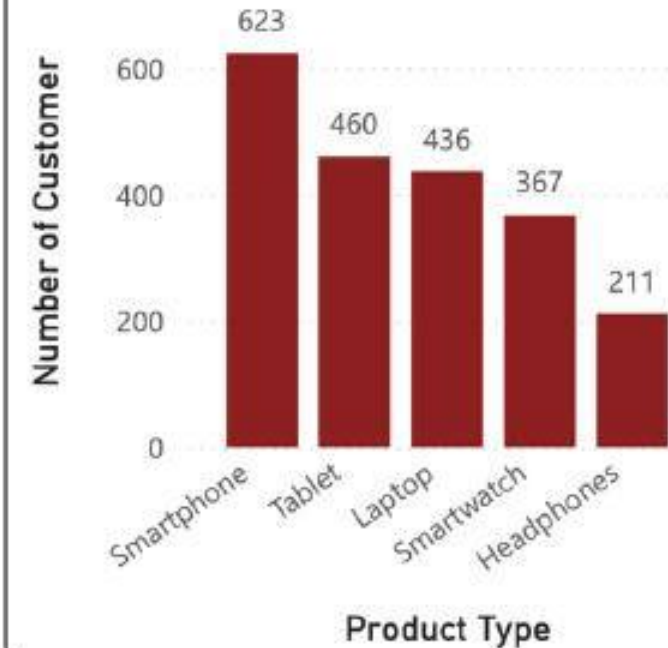
Segment

Cannot Lose Them ✓

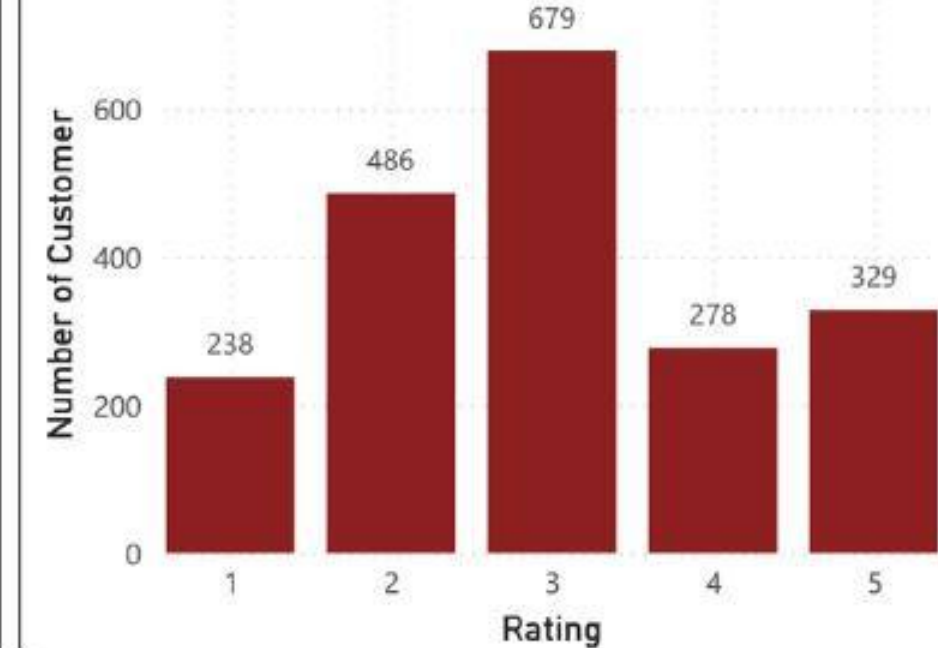
### "Best Customers" by Time



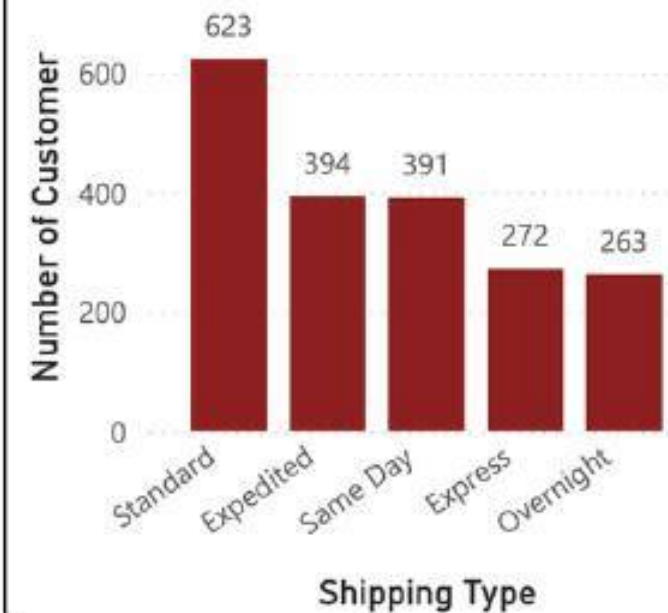
### "Best Customers" by Product Type



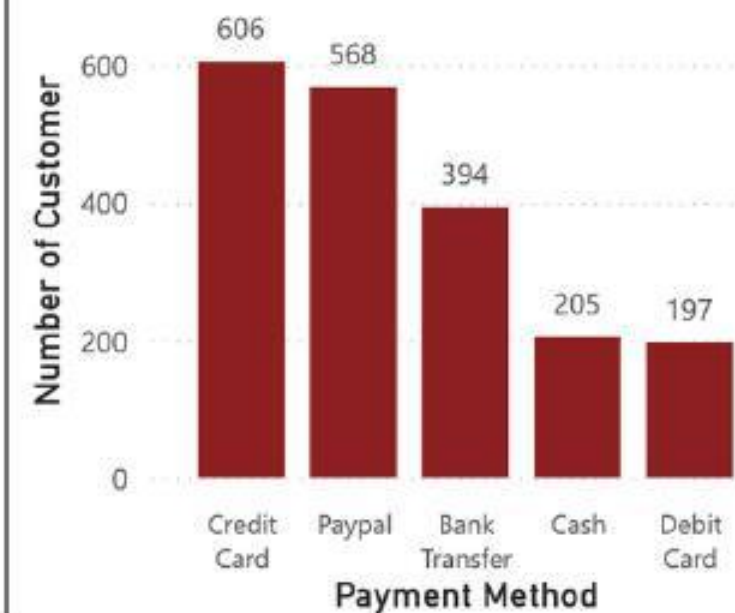
### "Best Customers" by Rating



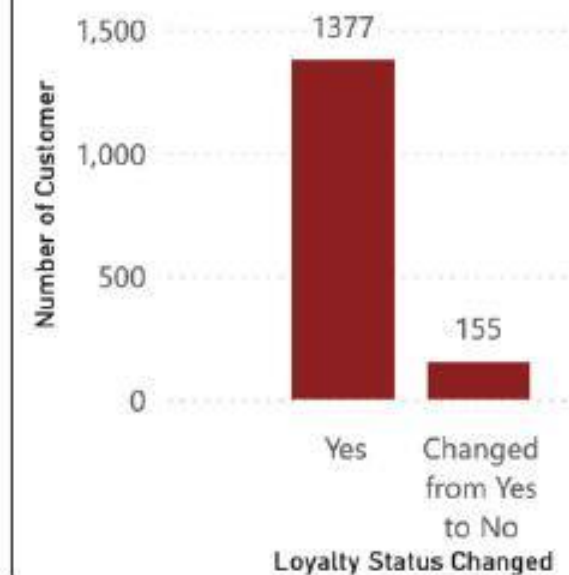
### "Best Customers" by Shipping Type



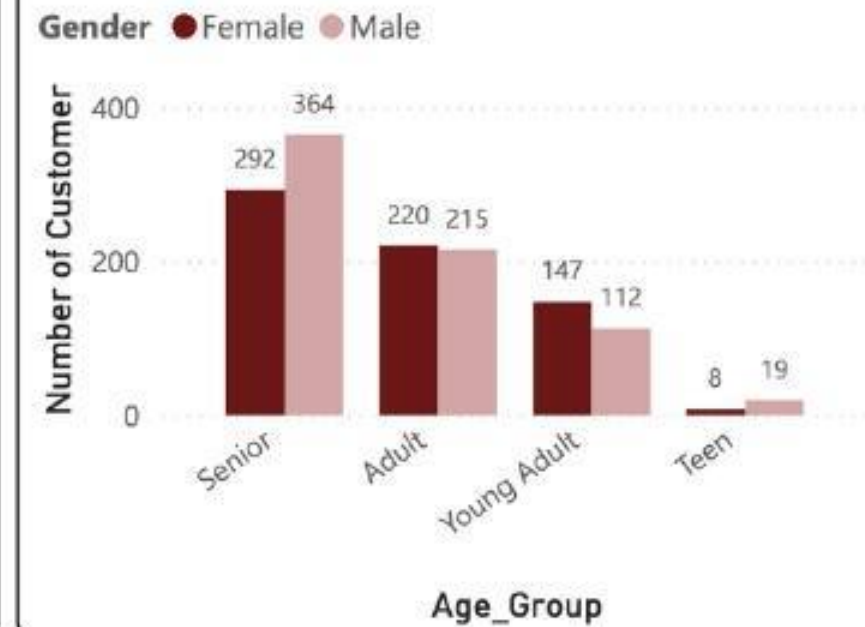
### "Best Customers" by Payment Method



### "Best Customers" by Loyalty Member



### "Best Customers" by Age Group



## THE "CAN'T LOSE THEM" SEGMENTATION



### Overview of the "Cannot Lose Them" Segment

- Revenue: \$9.91M – nearly 3x Best Customers.
- Customers: 1,377 – 3x more than Best Customers.
- Items Sold: 14K – nearly 3x Best Customers.
- Average Rating: 2.98 (slightly higher than 2.88).

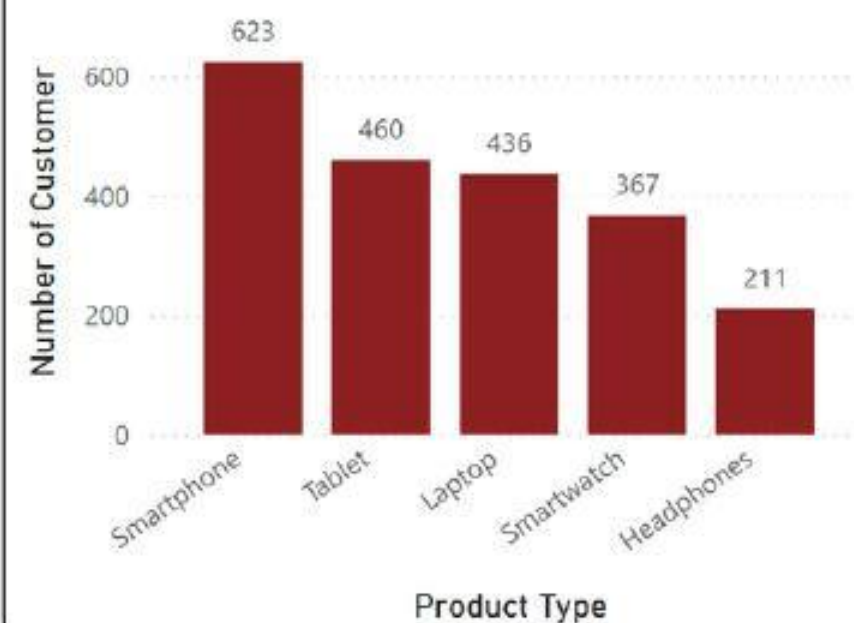
**Growth Trend: *Steady rise*** from May, peaking in Aug (an *increase of 492%*).

→ Indicates successful marketing/product fit.

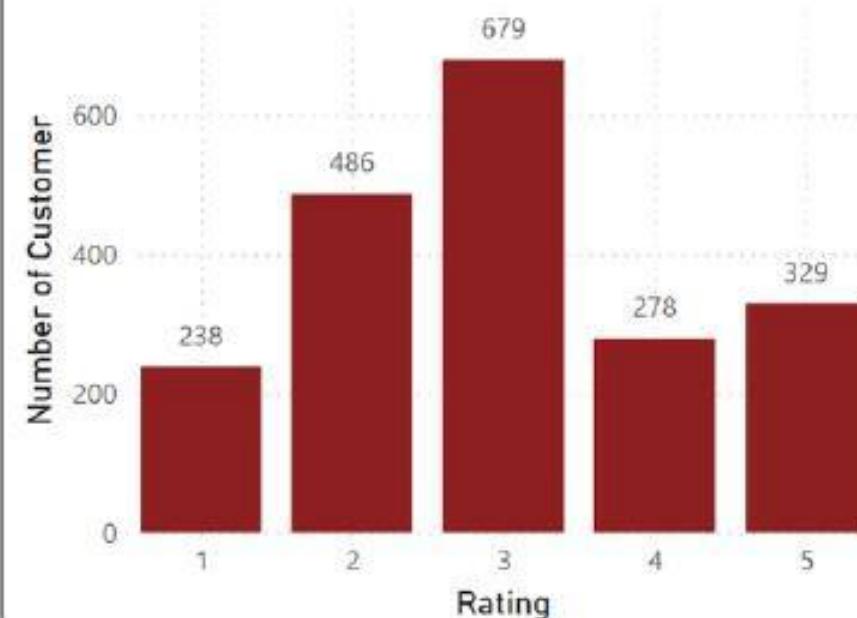
- The "Can't Lose Them" segment generates high revenue but also has a high risk of churn.
  - In May 2024, the "Best Customer" segment had no remaining customers, while the "Can't Lose Them" group experienced a sudden spike in numbers.
- This indicates a low likelihood of long-term retention and a high risk of customer churn.

## THE "CAN'T LOSE THEM" SEGMENTATION

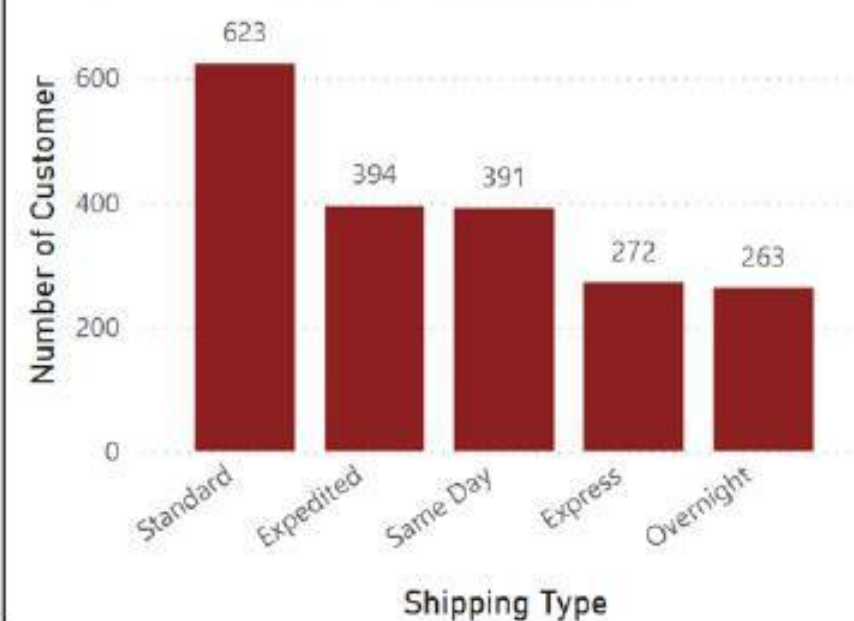
"Best Customers" by Product Type



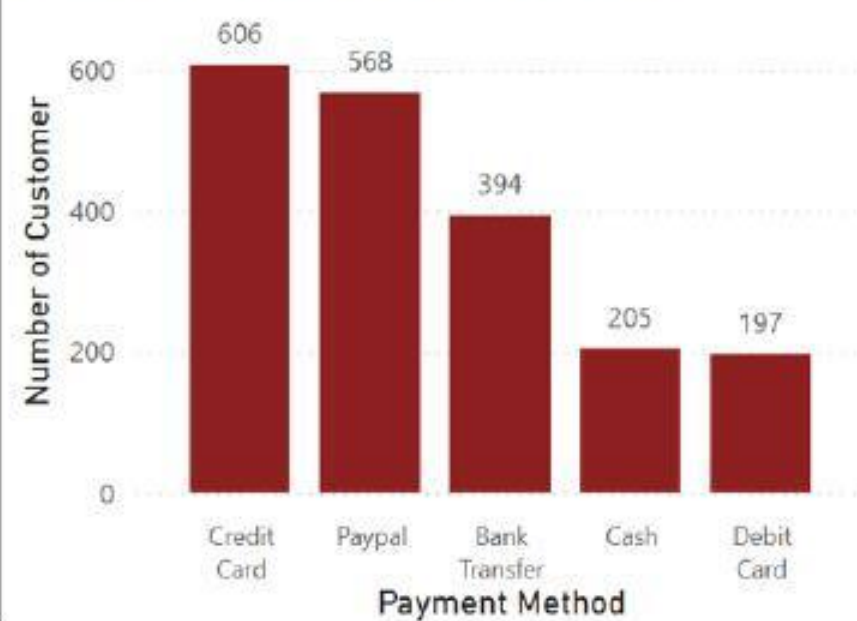
"Best Customers" by Rating



"Best Customers" by Shipping Type

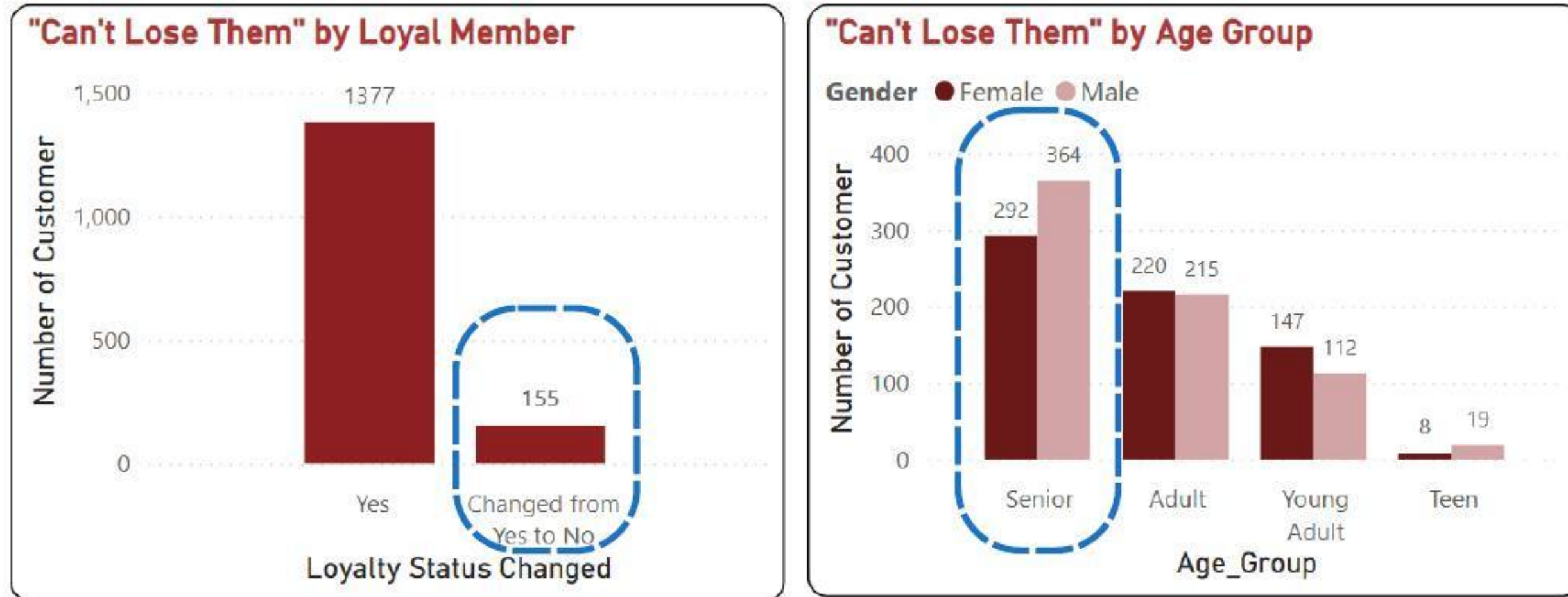


"Best Customers" by Payment Method



- **Top Products:** Smartphones, Tablets, Laptops.  
→ More interest in Tablets than Best Customers
- **Low Ratings:** Mostly 3 stars  
→ Risk of churn despite high spending.
- **Shipping:** Prefer Standard  
→ Offer flexible delivery options.
- **Payment:** Mostly Credit Card, PayPal, Bank Transfer  
→ Tech-savvy group.

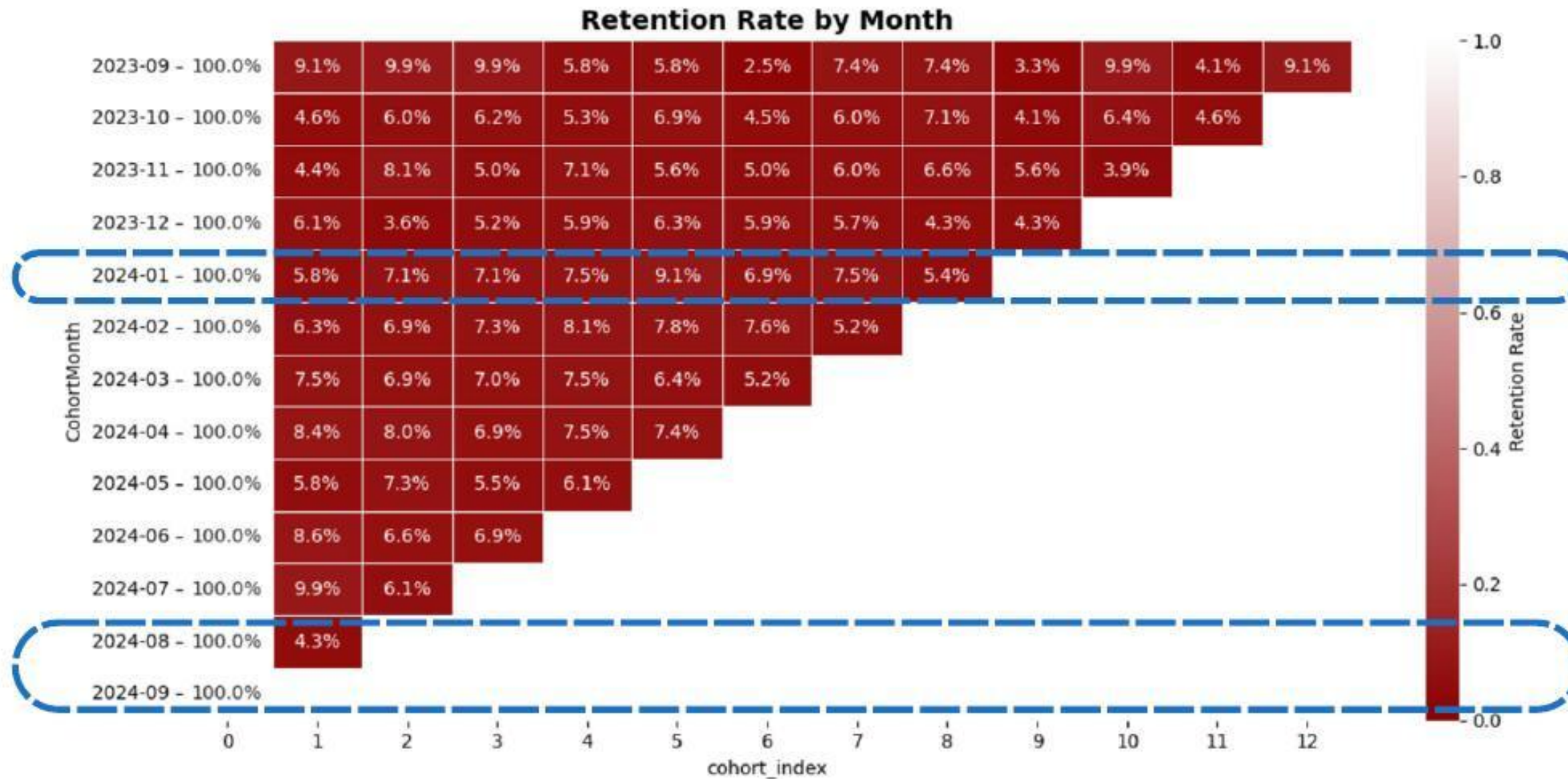
## AN OVERVIEW OF THE "CAN'T LOSE THEM" SEGMENT



- **Loyalty Member:** All customers have registered for membership, but many customers (155) do not use their membership when purchasing  
→ The loyalty program may **lack appeal**, or the membership payment process may be **overly complicated or time-consuming**
- **Age & Gender:** Mainly Seniors & Adults  
→ High spending, expect professional service.

**This is the highest-revenue customer group but has low ratings. While they are highly valuable, their dissatisfaction puts them at risk of leaving → Improving their experience is crucial for retention**

# RETENTION



## Best cohort: January 2024

- Strong retention until month 5 (9%).
- Gradual decline, not a steep drop like other months.

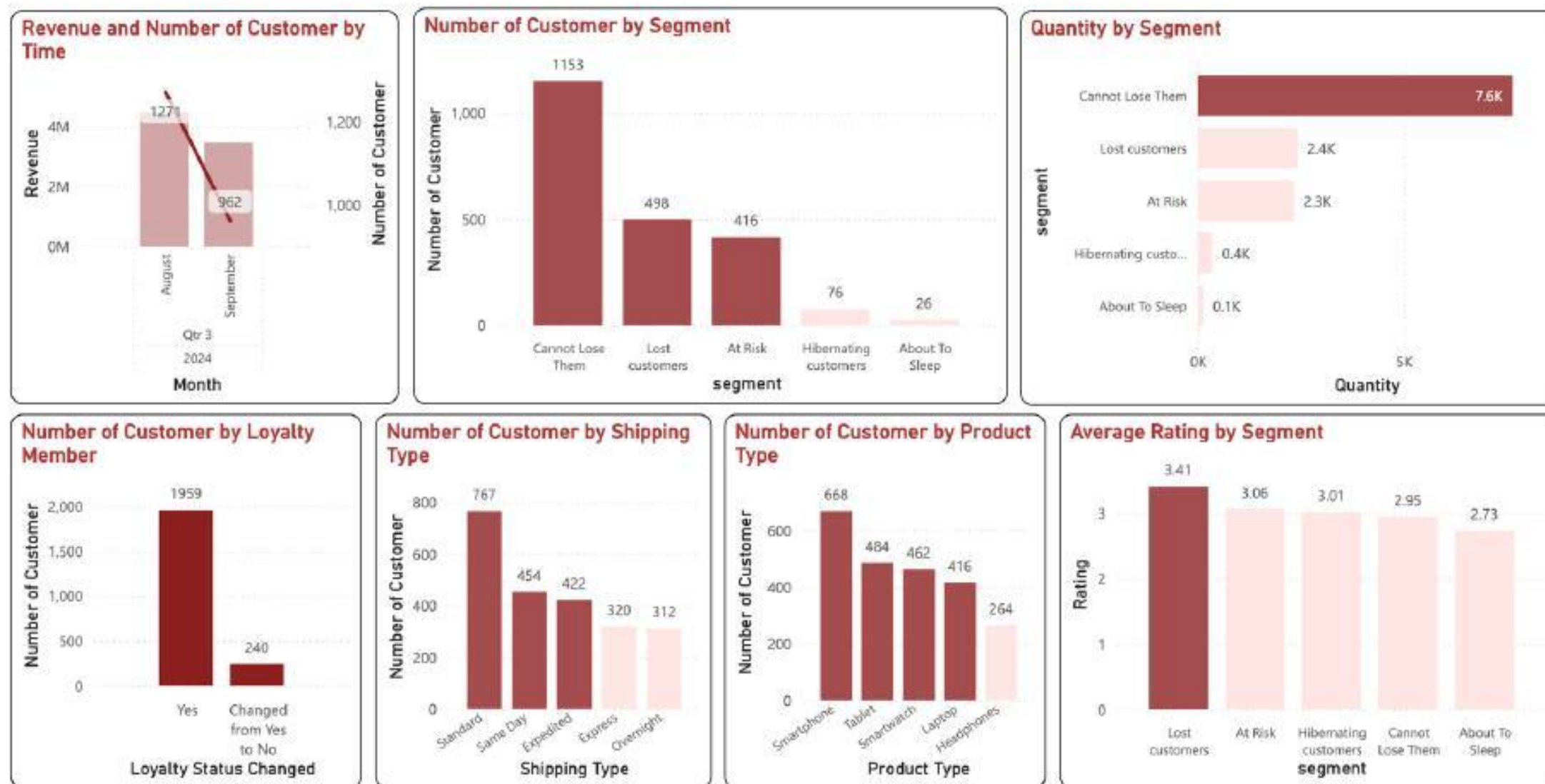
## Worst cohorts: August–September 2024

- Retention rate near 0% from month 1  
→ almost no returning customers.
- Likely due to poor post-sale service or ineffective retention strategy.

- Retention drops sharply after the first month, indicating low motivation to return.
- No cohort retains over 10% after month 6, showing a lack of loyalty-building programs.
- "One-time buyers" are very common.

# RETENTION

## Worst cohorts: August–September 2024



- Revenue and number of customer have **dropped significantly**.
- The **"Can't Lose Them"** segment accounts for the majority of customers and revenue, but they are at **risk of churning**.
- Many customers **do not use their membership** when purchasing
  - The **loyalty program** may **lack appeal and needs improvement**.
- **Standard shipping** is the most **commonly** used method
  - Are other shipping options too expensive or not meeting expectations?
- Purchases are mainly concentrated in the Smartphone category.
- The average rating is **low**
  - Possibly due to dissatisfaction with the product or service
  - Even high-spending customers might **leave**

- In August and September 2024, both revenue and customer volume declined, relying heavily on the "Can't Lose Them" segment — a group that is highly prone to churn.
- Additionally, dissatisfaction with products, services, or after-sales support has contributed to a low average rating, leading to customer attrition.
- A targeted strategy is urgently needed to address these issues and retain valuable customers.

# RECOMMENDATION

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# SHORT-TERM (0-3 MONTHS)

## RETENTION & SATISFACTION IMPROVEMENT

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### Enhance care for the "Can't Lose Them" group

- Send personalized care emails/SMS with tailored promotions.
- Prioritize fast support and actively follow up on complaints.
- Offer exclusive discounts and incentives to increase purchase frequency.

### Improve the experience of the "Best Customers" group

- Send quick surveys to identify reasons for low ratings → respond within 48 hours.
- Improve the shopping interface, checkout process, and delivery time & reasonable prices (many customers choose "Standard" – faster delivery could make a difference).
- Most customers fall into the "Senior" group (busy with work and family), who value speed and convenience → Optimize the purchasing and checkout process.

### Early warning system for churn risk

- Set up alerts for loyal customers who reduce their purchase frequency → automatically send promotions or engagement offers.

# MID-TERM (3–6 MONTHS)

## PERSONALIZATION & REVENUE GROWTH

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### Enhance the Loyalty Program

- Introduce new tiers based on purchase frequency and spending amount.
- Increase rewards for the “Loyal” and “Potential Loyalist” groups (combined ~18K orders).

### Segment customers based on behavior for personalized care

- Use demographics (age, gender) and purchase patterns to create more relevant offers

### Increase satisfaction through personalized product recommendations

- Suggest suitable products based on purchase history and customer profiles (e.g., older customers → promote warranty packages; younger customers → recommend accessories).

### Improve product quality and delivery service

- *Analyze reasons behind low ratings from “Best Customers” (majority gave 2–3 stars).*
- *Focus on enhancing frequently reported issues like shipping and return processes.*

# LONG-TERM (6+ MONTHS)

## AUTOMATION & BRAND LOYALTY BUILDING

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Develop an automated CRM system and customer scoring

- Automatically classify customers into groups like Best, At Risk, Can't Lose, etc., to apply targeted retention strategies

Apply AI/ML to predict churn and optimize incentives

- Forecast customers likely to stop purchasing → send timely personalized offers.

Implement long-term promotion policies based on demographics and behavior

- Create combo packages or annual membership plans for "Senior" customers (high loyalty).
- Reward actions like referring friends or providing product feedback with loyalty points.

Build a loyal customer community

- *Invite top customers to join VIP programs, private groups, or exclusive events → foster brand engagement*



**THANK YOU**

# ACHIEVEMENT

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1



2



3



4



5



6



# Future Plan

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# Contact us

📞 +123-456-7890

✉️ hello@reallygreatsite.com

🌐 www.reallygreatsite.com

📍 123 Anywhere ST., Any City, ST  
12345

