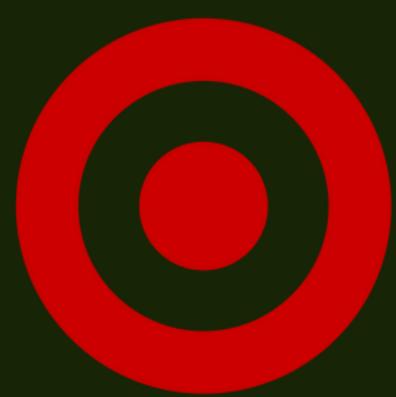




# **UNLOCKING CUSTOMER BEHAVIOR: THE SECRET TO SUPERMARKET SUCCESS IN A COMPETITIVE MARKET**

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# BACKGROUND



TARGET



THE SUPERMARKET INDUSTRY IN THE US IS HIGHLY COMPETITIVE

INNOVATION IS NEEDED TO LEVERAGE OPERATIONAL EFFICIENCY

SUPERMARKET CUSTOMER'S DATA IS THE KEY

- CUSTOMER'S BEHAVIOR
- POTENTIAL CUSTOMER SEGMENT
- ON-POINT MARKETING STRATEGIES

# PROBLEM STATEMENT

"How can the supermarket industry increase profits and revenue by maximizing the potential obtained from customer information data in order to compete with other supermarket industries?"

# GOALS

01

Determine the pattern of customer purchasing behavior based on different demographic groups

02

Identify customer segmentation based on purchasing behavior represented by three different variables, namely Recency, Frequency, and Monetary

03

Develop marketing strategies that are right on target for different customer segmentations

## STAKEHOLDER



MARKETING AND BUSINESS TEAM  
MANAGER

# DATA UNDERSTANDING

## People & Demography Data

**ID:** Customer ID.

**Year\_Birth:** Year of birth of the customer.

**Education:** Customer's educational background.

**Marital\_Status:** Customer's marital status.

**Income:** Customer's annual income/salary.

**Kidhome:** Number of children in the customer's household.

**Teenhome:** Number of teenagers in the customer's household.

**Dt\_Customer:** Date the customer registered with the company.

**Recency:** Number of days since the customer last made a purchase.

**Complain:** 1 if the customer filed a complaint in the last 2 years, 0 if not.

## Products Data

**MntWines:** Total purchases of wine products in the last 2 years.

**MntFruits:** Total purchases of fruit products in the last 2 years.

**MntMeatProducts:** Total purchases of meat products in the last 2 years.

**MntFishProducts:** Total purchases of fish products in the last 2 years.

**MntSweetProducts:** Total purchases of sweet products in the last 2 years.

**MntGoldProducts:** Total purchases of gold products in the last 2 years.

# DATA UNDERSTANDING

## Place & Channel Data

**NumDealsPurchases:** Number of purchases made with a discount.

**NumWebPurchases:** Number of purchases made through the company's website.

**NumCatalogPurchases:** Number of purchases made using a catalog.

**NumStorePurchases:** Number of purchases made directly in the store.

**NumWebVisitsMonth:** Number of website visits in the last month.

## Promotions and Campaign Data

**AcceptedCmp1:** 1 if the customer accepted the first campaign offer, 0 if not.

**AcceptedCmp2:** 1 if the customer accepted the second campaign offer, 0 if not.

**AcceptedCmp3:** 1 if the customer accepted the third campaign offer, 0 if not.

**AcceptedCmp4:** 1 if the customer accepted the fourth campaign offer, 0 if not.

**AcceptedCmp5:** 1 if the customer accepted the fifth campaign offer, 0 if not.

**Response:** 1 if the customer accepted the last campaign offer, 0 if not.

# DATA CLEANING

## Data Type Manipulation

**ID : integer to object**

**Dt\_Customer : string to datetime**

## Drop Unused Columns

**Z\_CostContact and Z\_Revenue**

## Missing Values

**Income : median income by Education**

## Outlier and Anomalies

**Year\_Birth < 1920**

**Income > 600000**

## Duplicates

**No duplicated Data**

## Replace Value Names

**Marital\_Status : Together and Alone**

**Education : Graduate, Undergraduate,**

**Postgraduate**

# DATA OVERVIEW

FOR THE LAST 2 YEARS, THIS SUPERMARKET HAS...

2236 OVERALL TOTAL CUSTOMERS

1.35 M OF TOTAL REVENUE

TOTAL CUSTOMER AND PROPORTION BY INCOME GROUP

LOW INCOME (≤25k)	MEDIUM LOW INCOME (25K - 60K)	MEDIUM HIGH INCOME (60K - 90K)	HIGH INCOME 
242 (10.82%)	1156 (51.70%)	786 (35.15%)	52 (2.33%)

TOTAL CUSTOMER AND PROPORTION BY GENERATION

BABY BOOMERS (1940-1964)	GEN X (1965-1980)	MILLENIALS (1981-1996)
783 (35.02%)	1068 (47.76%)	385 (17.22%)

# : DATA OVERVIEW



**99.11% of customers do not file complaints in the past 2 years**



**In-store purchases are more popular than online purchases**



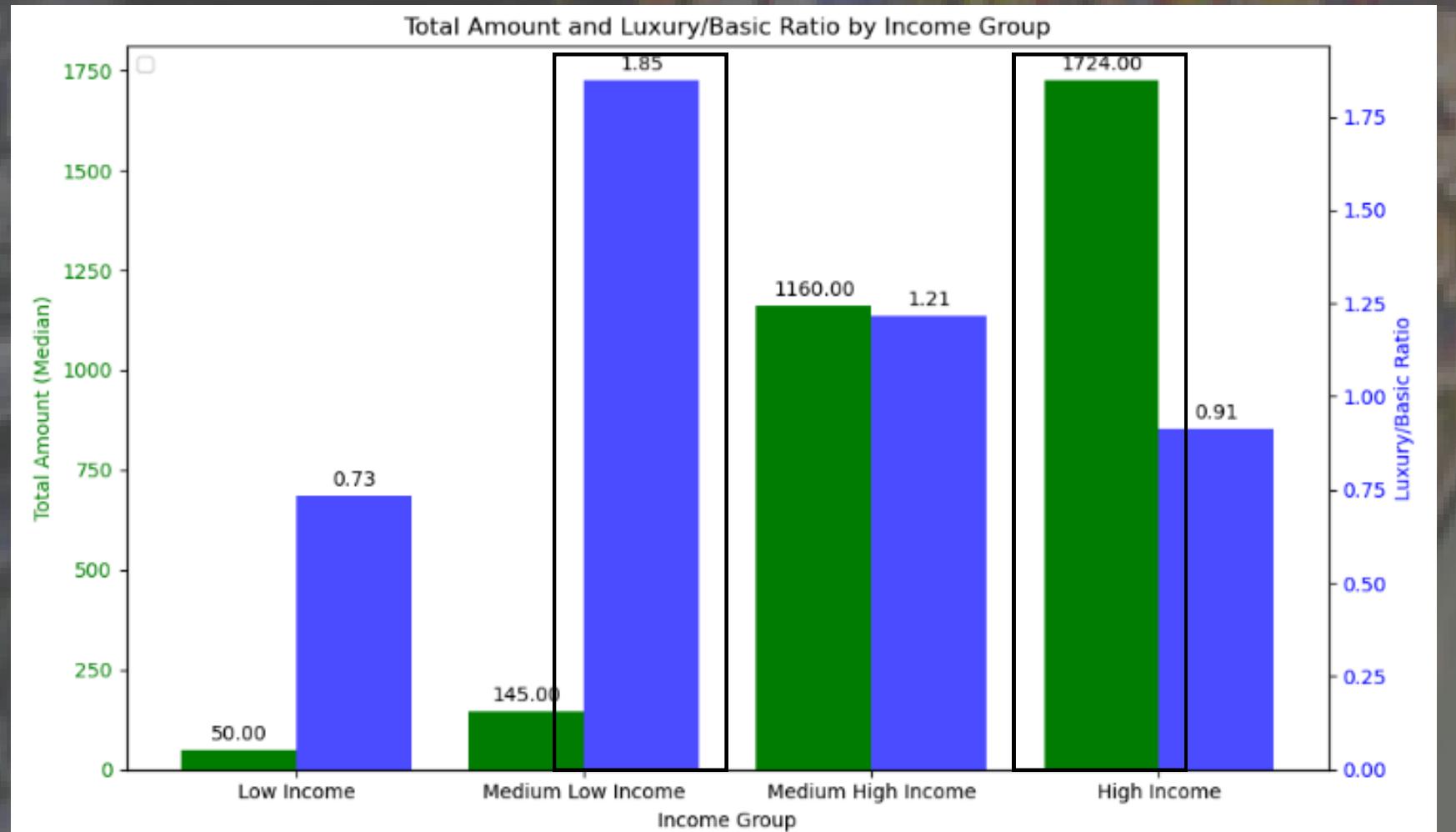
**Wine makes the biggest contribution to supermarket revenues**

# DATA ANALYSIS: LUXURY/BASIC PRODUCT RATIO



- Customers without dependents, whether single or together, show the lowest Luxury-to-Basic ratio.
- When customers have dependents, the Luxury-to-Basic ratio increases significantly. However, as the number of dependents rises further, this ratio tends to decrease.

# DATA ANALYSIS: LUXURY/BASIC PRODUCT RATIO



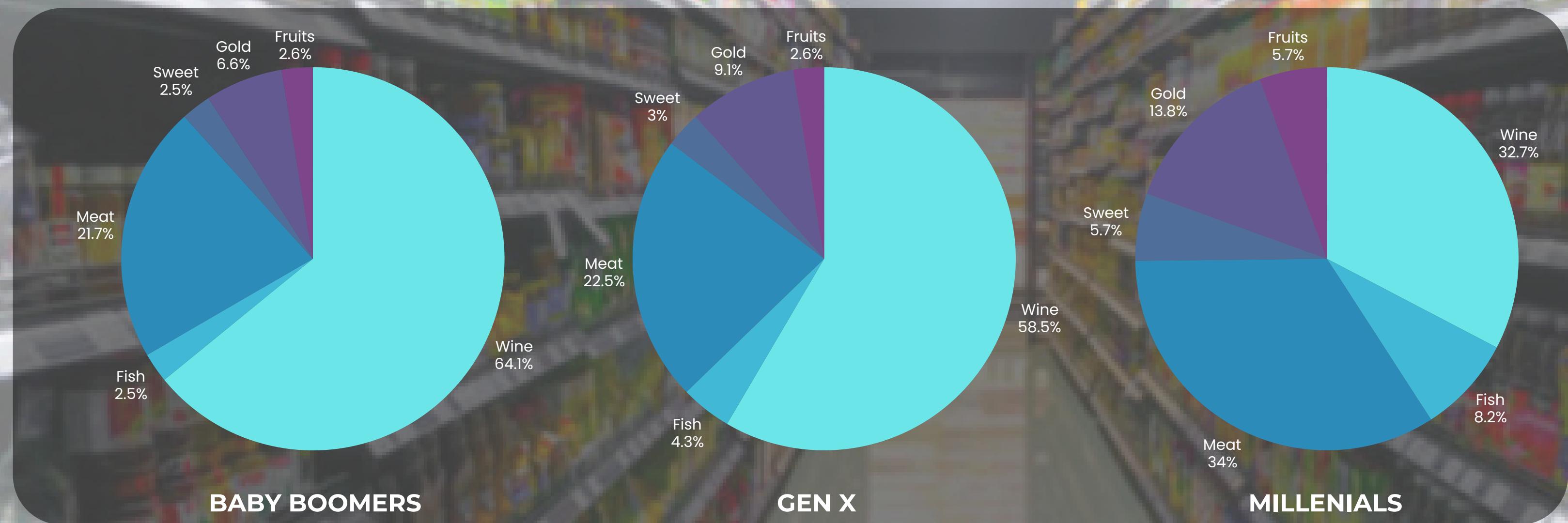
The High Income group contributes roughly equal revenue from both luxury and basic products, whereas the Medium Low Income group tends to spend more heavily on luxury products.

# DATA ANALYSIS: CHANNELS AND PRODUCTS



In each generation, in-store purchases show higher total sales compared to online purchases. This indicates that buying products directly at the store is more popular among supermarket customers.

# DATA ANALYSIS: CHANNELS AND PRODUCTS



The most popular product among Baby Boomers and Gen X is wine, followed by meat products. However, Millennials tend to have a more balanced proportion between wine and meat purchases.

# DATA ANALYSIS: CAMPAIGN AND DEALS



- The acceptance rate of customers significantly increases during the last campaign.
- Assuming there are three discount campaigns held each year, the final campaign of the year shows a notably higher acceptance rate compared to the previous campaigns.

# DATA ANALYSIS: CAMPAIGN AND DEALS

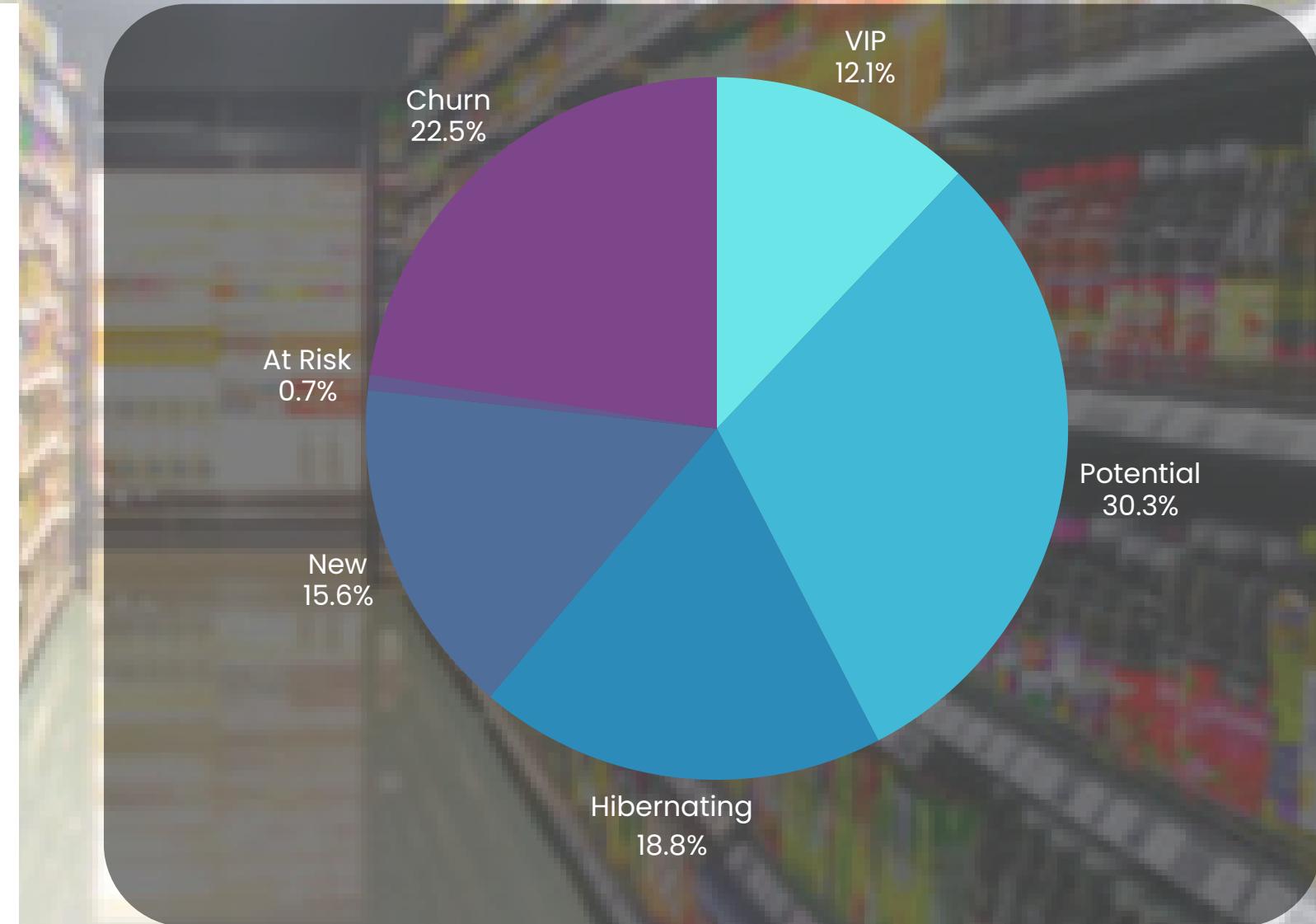
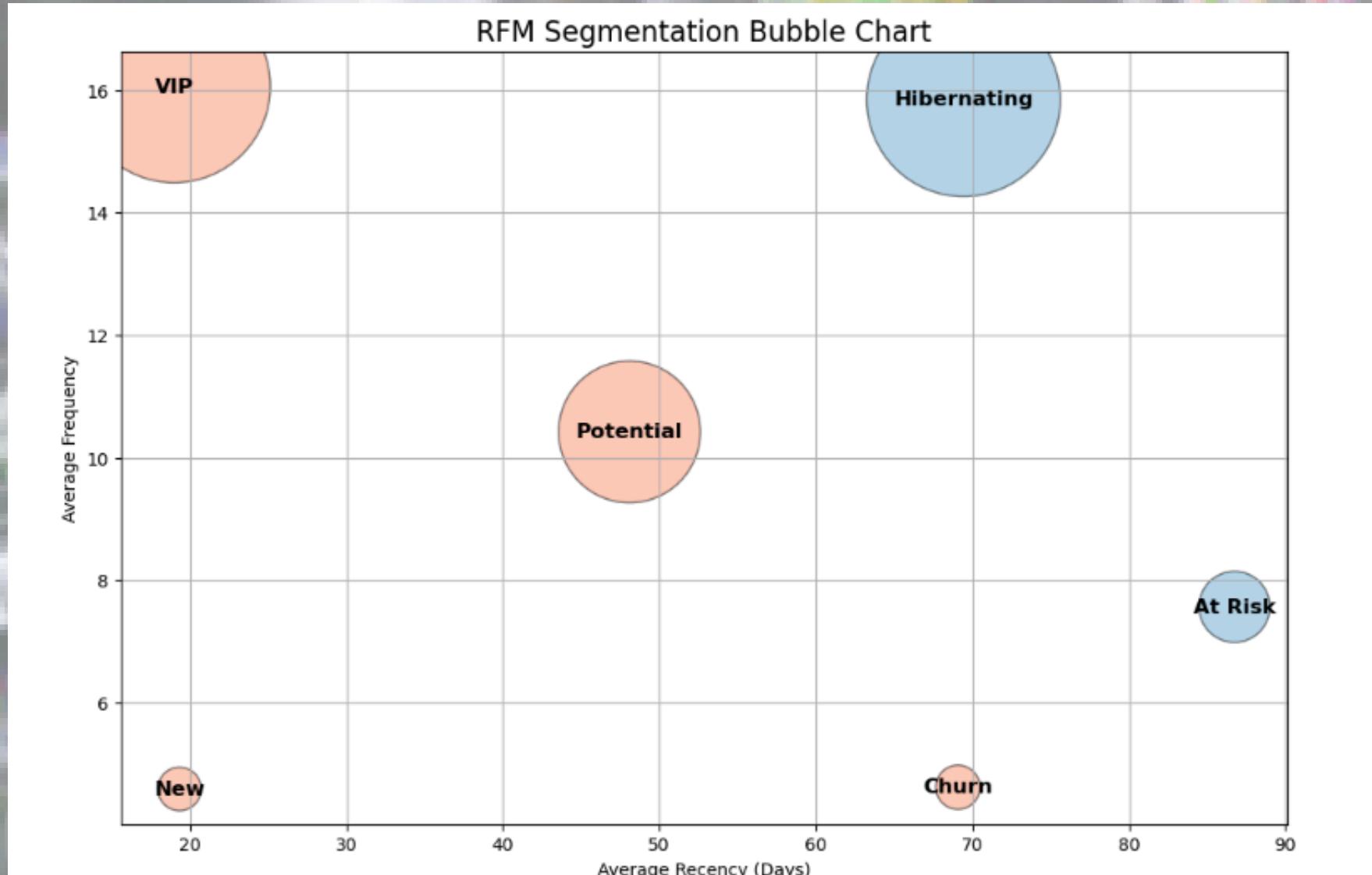


- Higher income groups show a lower percentage of discount usage.
- Lower income groups tend to buy products on sale, while higher income groups are more likely to purchase products at regular prices.

# DATA ANALYSIS: RFM SEGMENTATION

RFM SEGMENTS	DESCRIPTION
VIP	Loyal customers with recent, frequent, and high-value purchases.
Potential	New or growing customers with moderate activity and spending.
Hibernating	Previously active customers who haven't purchased in a while, at risk of churn.
New	First-time or few-time buyers exploring the products.
At Risk	Customers with past high activity but recent inactivity, likely to churn.
Churn	Customers inactive for a long time, likely lost.

# DATA ANALYSIS: RFM SEGMENTATION



The 'Potential' segment, which has the largest proportion, needs to be closely monitored because customers in this segment have the potential to upgrade their status to VIP. A strategic approach is also required for each segment.

# : CONCLUSION

## PURCHASE BEHAVIOR

- Customers without dependents tend to be more frugal, focusing on basic products.
- High Income group is smallest but contributes the largest median revenue.
- Medium Low Income group shows relatively high luxury product purchases.
- All generations prefer shopping in-store rather than online.
- Wine and meat products are the top revenue contributors across generations.
- Customers tend to respond well to year-end discount campaigns.
- Lower-income customers are more likely to buy discounted products.

## RFM SEGMENTATION

There are 6 customer segments, each requiring tailored strategies

## MARKETING STRATEGY

Targeted marketing strategies per segment are essential for maximum impact



# RECOMMENDATION: MARKETING STRATEGY

## BASED ON INCOME GROUP

- **High & Medium High Income:** Offer premium products (imported organic fruits, latest wine brands, high-quality meat) matching their purchasing power.
- **Medium Low Income:** Provide limited-time discounts (flash sales) or bundle luxury products with others for better value.
- **Low & Medium Low Income:** Introduce loyalty programs with special discounts or reward points to boost purchase frequency.

## BASED ON GENERATIONS

- **Baby Boomers & Gen X:** Host wine tasting events and use special occasions (Christmas, New Year, Valentine's) for bundling or discounts to increase wine purchases.
- **Millennials:** Create limited-time bundles combining luxury and basic products to encourage balanced purchases.

## BASED ON NUMBER OF DEPENDENTS

**Customers without dependents prefer basic food products;** offer competitively priced, quality essentials.



# RECOMMENDATION: MARKETING STRATEGY

## BASED ON RFM SEGMENTATION

- **VIP:** Exclusive loyalty benefits (rewards, early access, special discounts).
- **Potential:** Bundle offers and extra discounts to encourage more frequent shopping.
- **New:** Welcome perks (vouchers, next-purchase discounts) and loyalty program info.
- **Hibernating:** Special offers, satisfaction surveys, and new product info.
- **At Risk:** Limited-time reminders, discounts on favorite products, service evaluation.
- **Churn:** Strong incentives (big discounts, rewards) and exit surveys to understand churn reasons.

## OVERALL CUSTOMER STRATEGY

Run discount campaigns sparingly (max 3 times/year), focusing on year-end campaigns aligned with major holidays (Christmas, Thanksgiving, New Year) for maximum impact.



**THANK YOU  
TERIMA KASIH**

