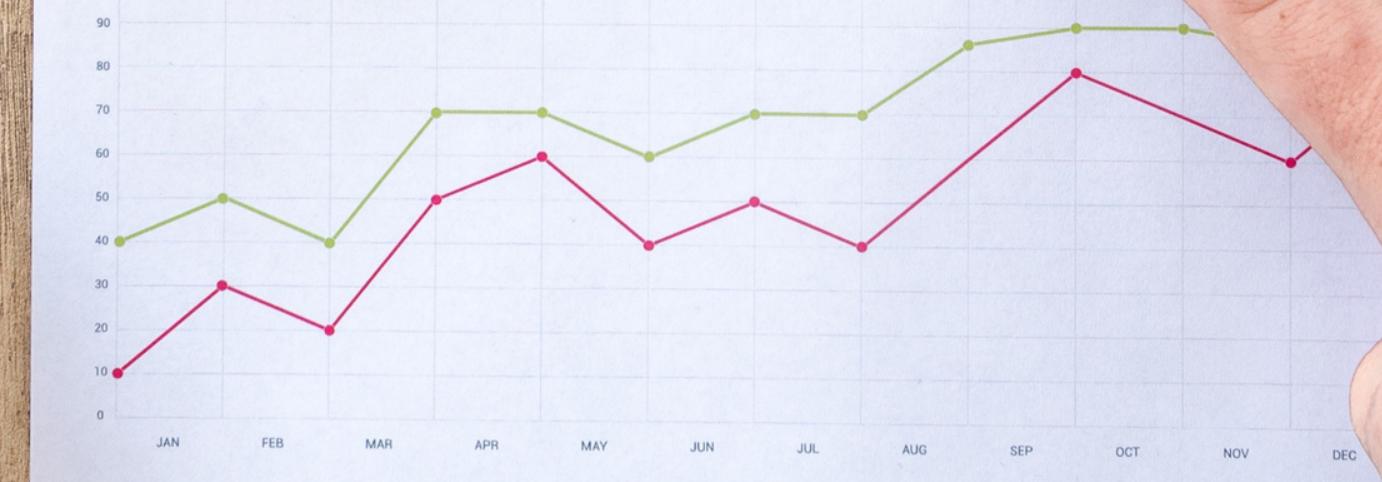


# Business Analysis

Case study is provided by Dr. Omar Romero-Hernandez



# Who are we?

Members of Group 2:

1. Huỳnh Thiện Nhân
2. Huỳnh Quyền Uy
3. Nguyễn Thùy Giang



# Business Case at A Glance

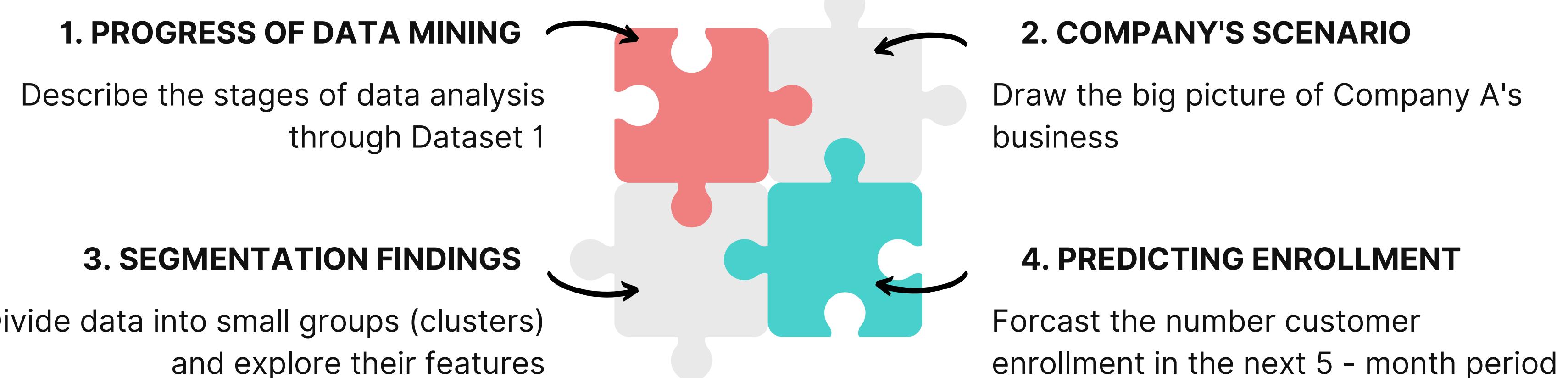
## UNKNOWN CUSTOMER SEGMENTATION

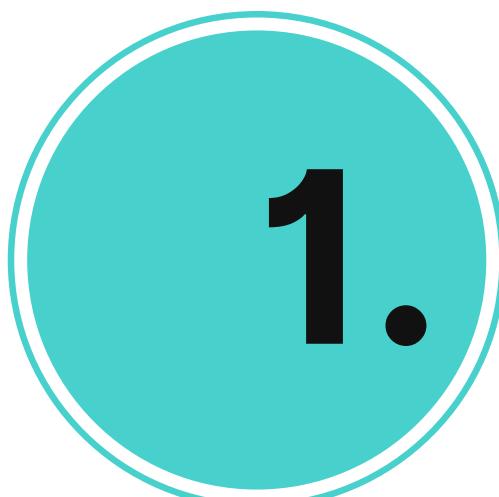
Company A sells 6 product categories in 4 multi-channels. We are provided a set of data related to customer characteristics and their purchasing behaviors in the period of 2012 - 2014 based on the date of customer enrollment.

## CUSTOMER ENROLLMENT FORECASTING

The application of regression lectures in building a forecasting model about the number of customer enrollment in Company A.

# Content





**1.**

# Progress of data mining

**Step 1:** Accessing and cleaning

**Step 5:** Error KPIs assessment

**Step 2:** Exploratory data analysis

**Step 6:** Data visualization

**Step 3:** Performing statistical analysis

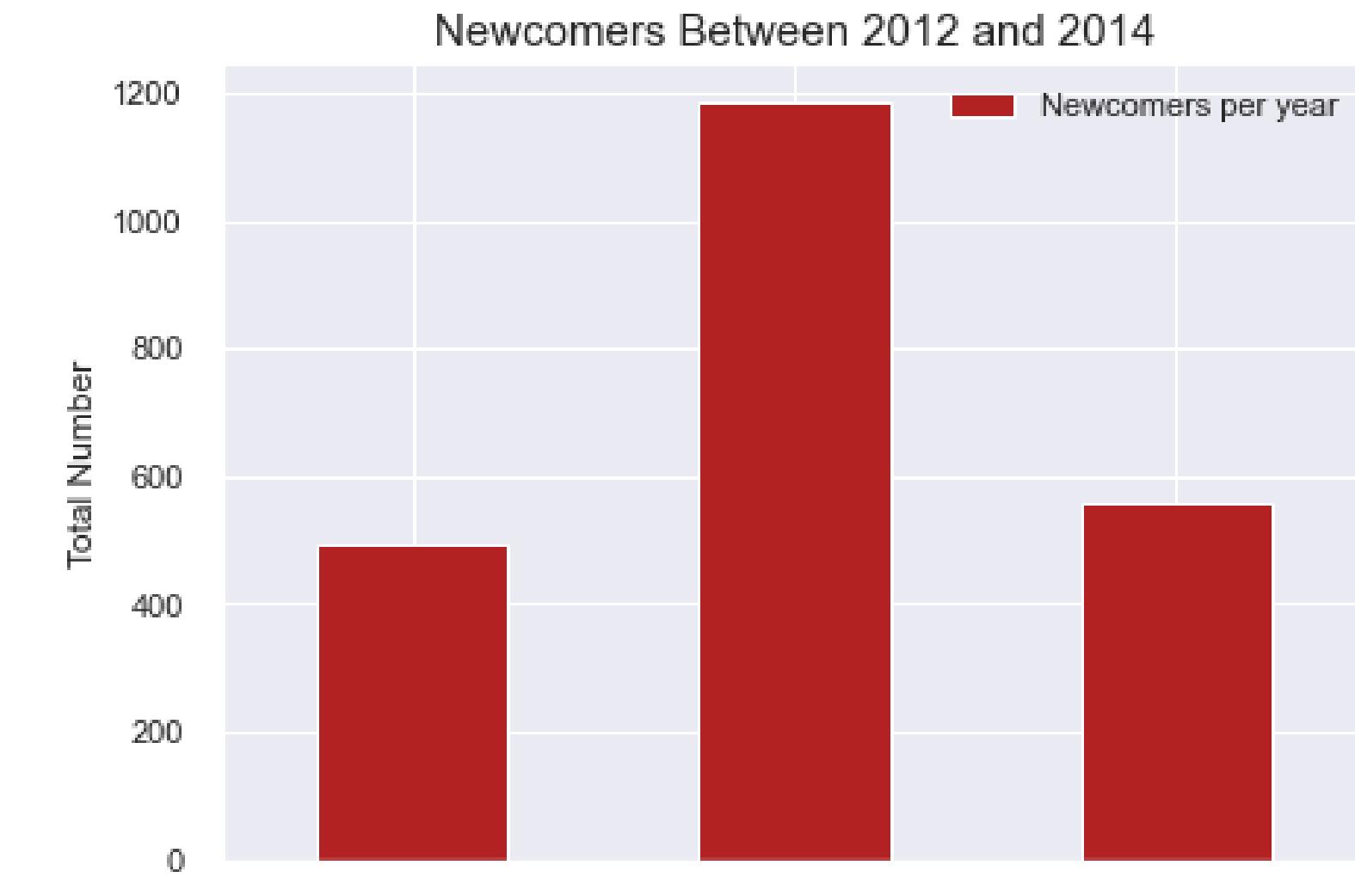
**Step 7:** Forming data-driven solutions

**Step 4:** Forecasting customer enrollment

## 2. Company's scenario

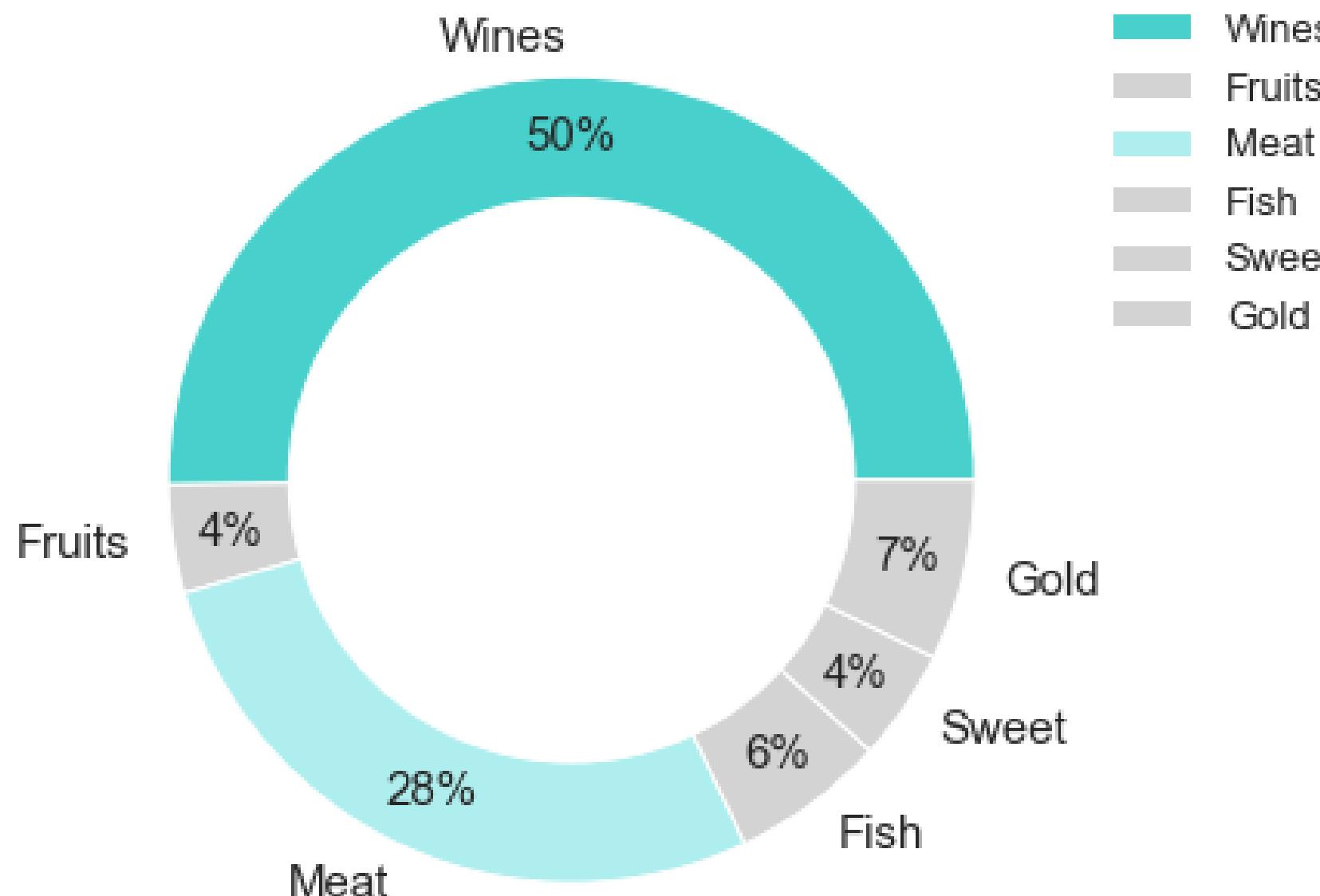
2,236 customers

Up to 1.4m \$  
in revenue

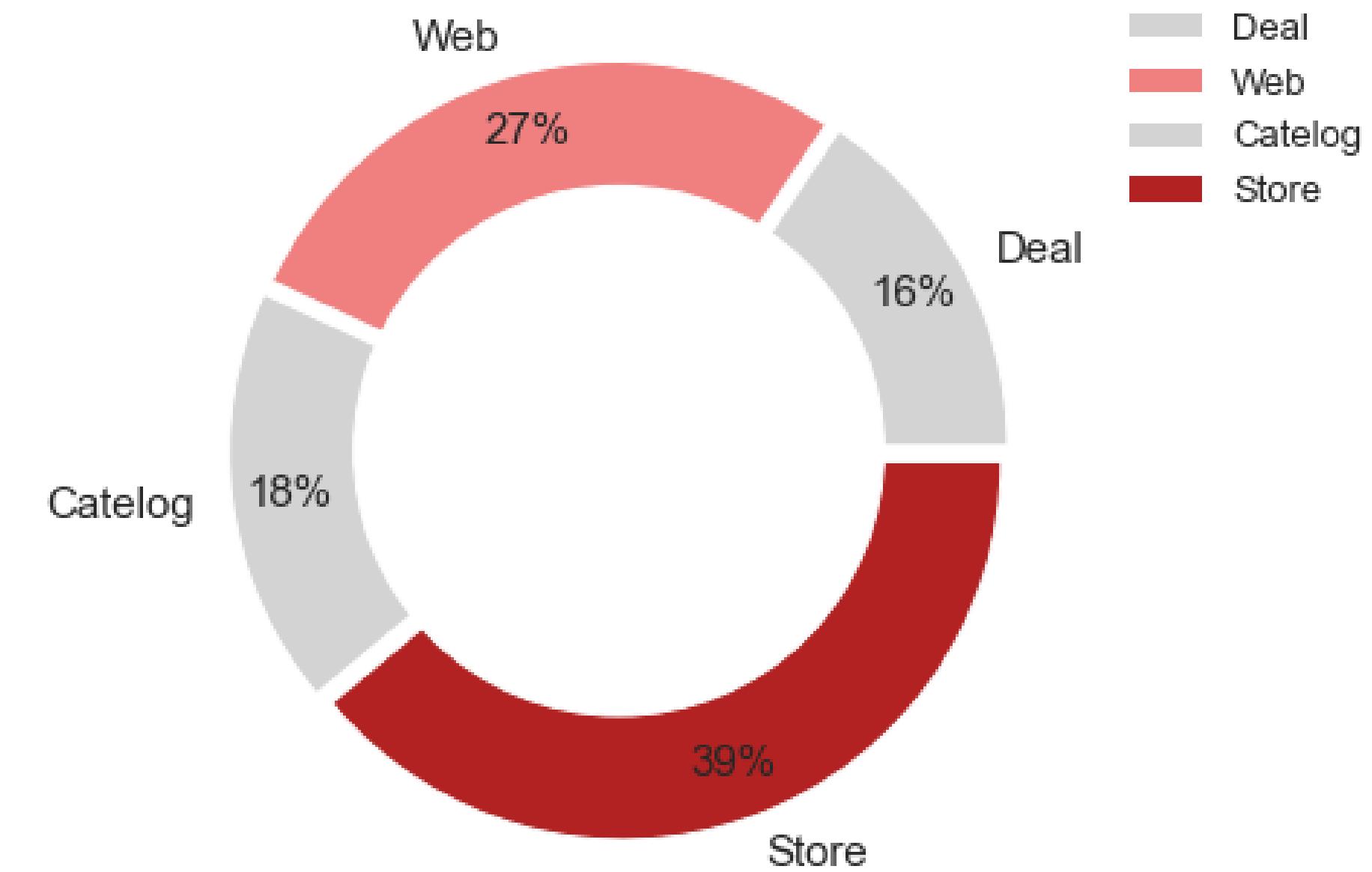


## 2. Company's scenario

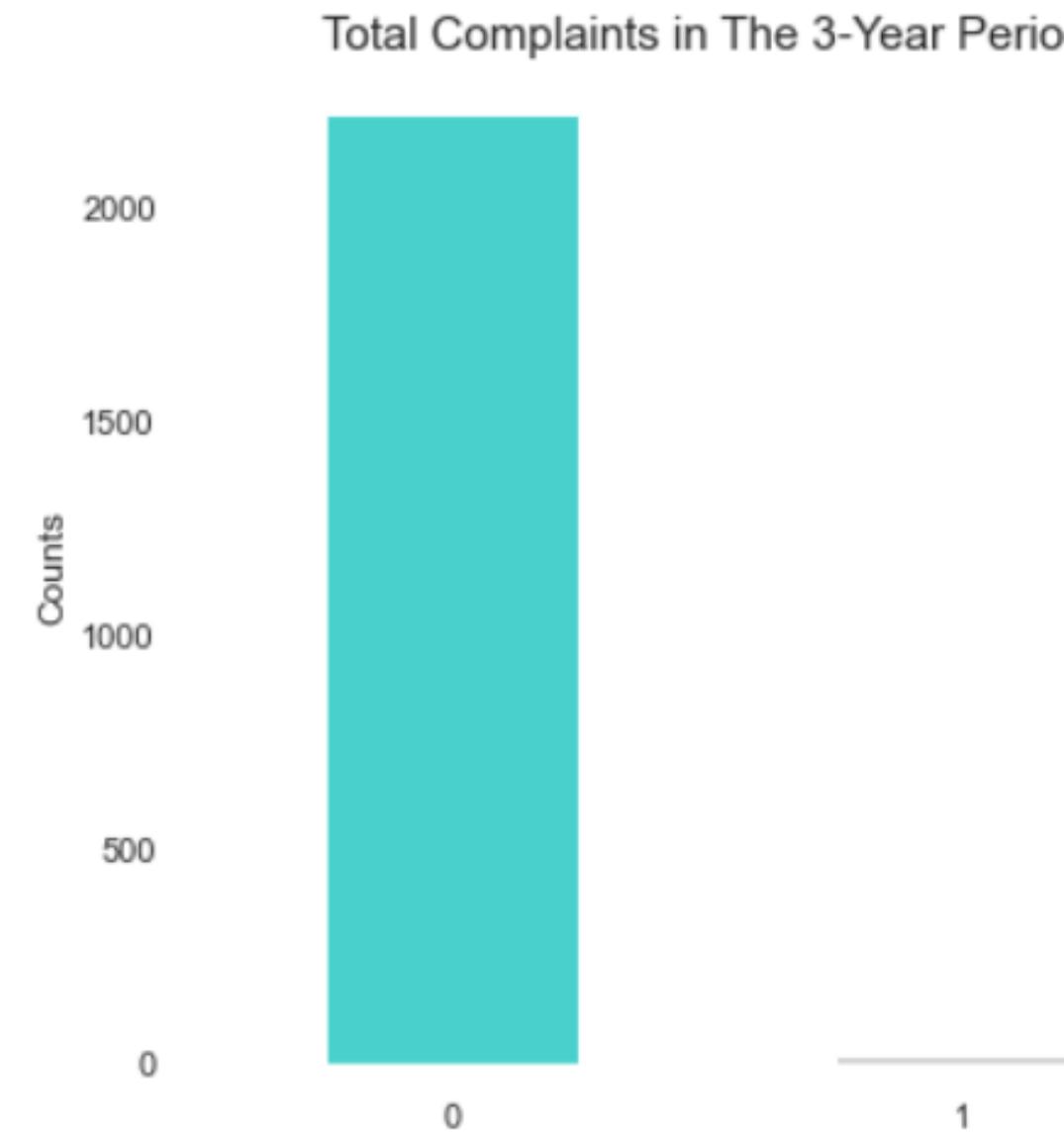
Total Revenue by Products



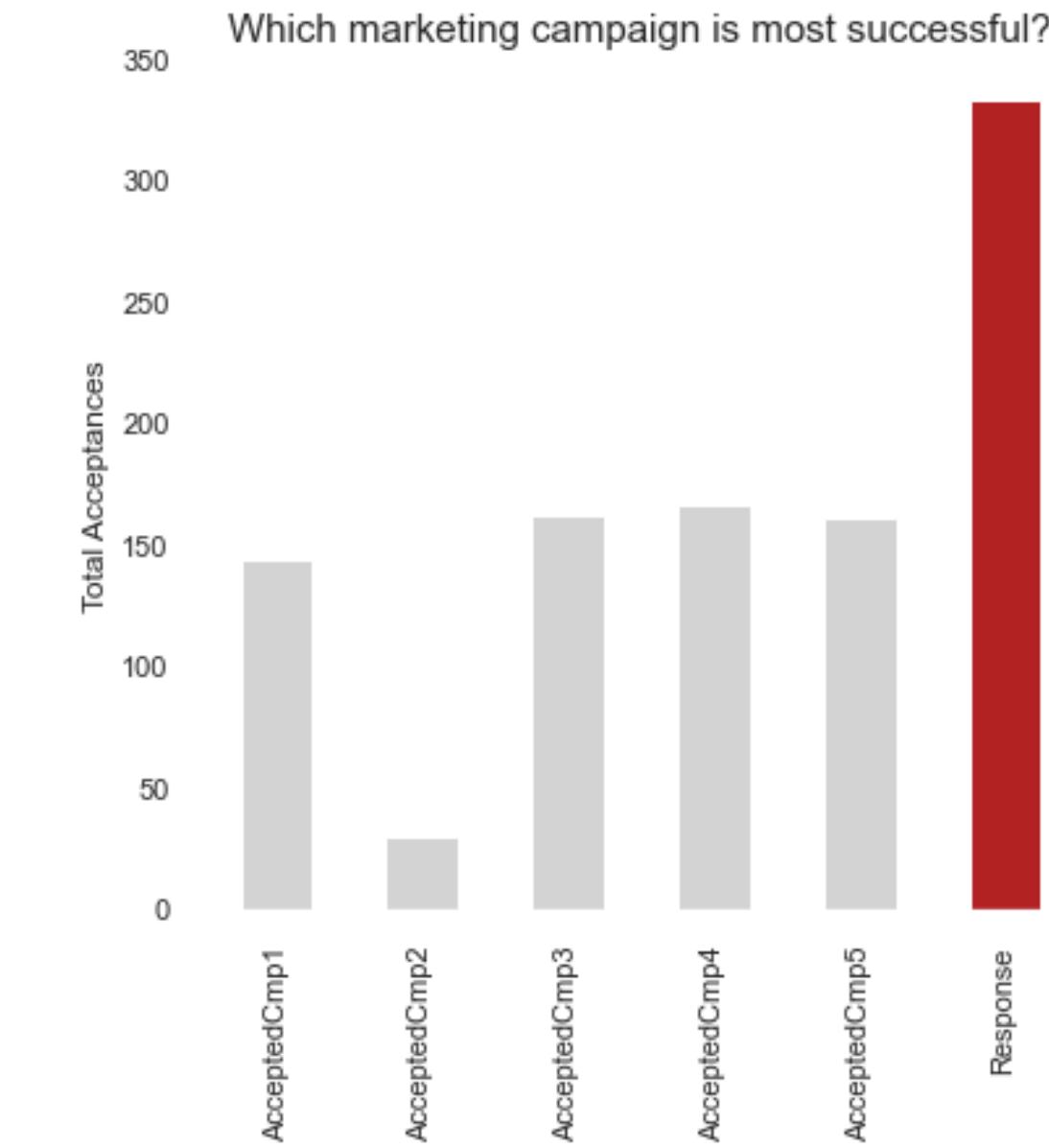
Total Purchases by Channels



## 2. Company's scenario



*Excellent  
customer service & performance!*

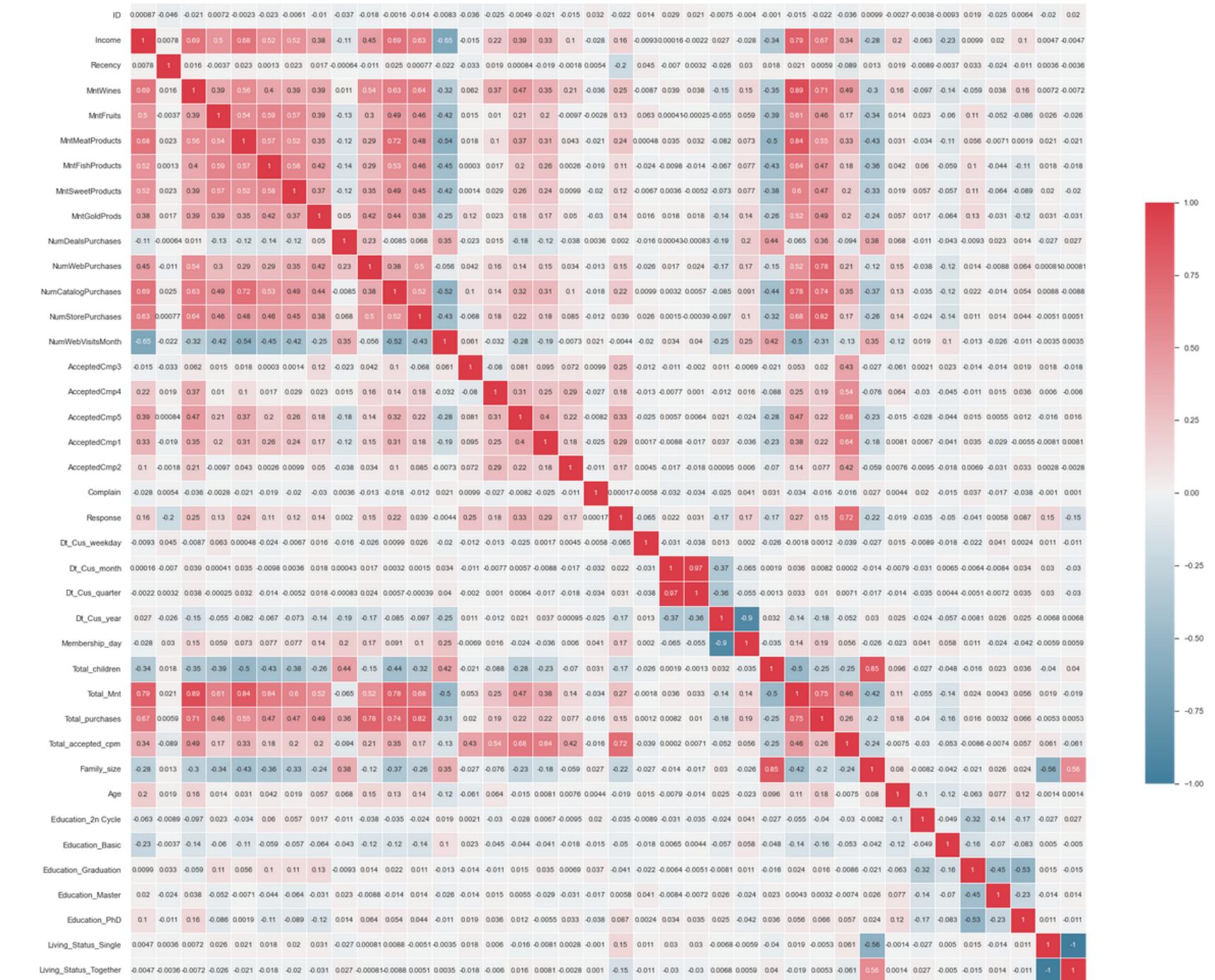


*Last campaign was most  
successful but still inefficiency*

# 2. Company's scenario

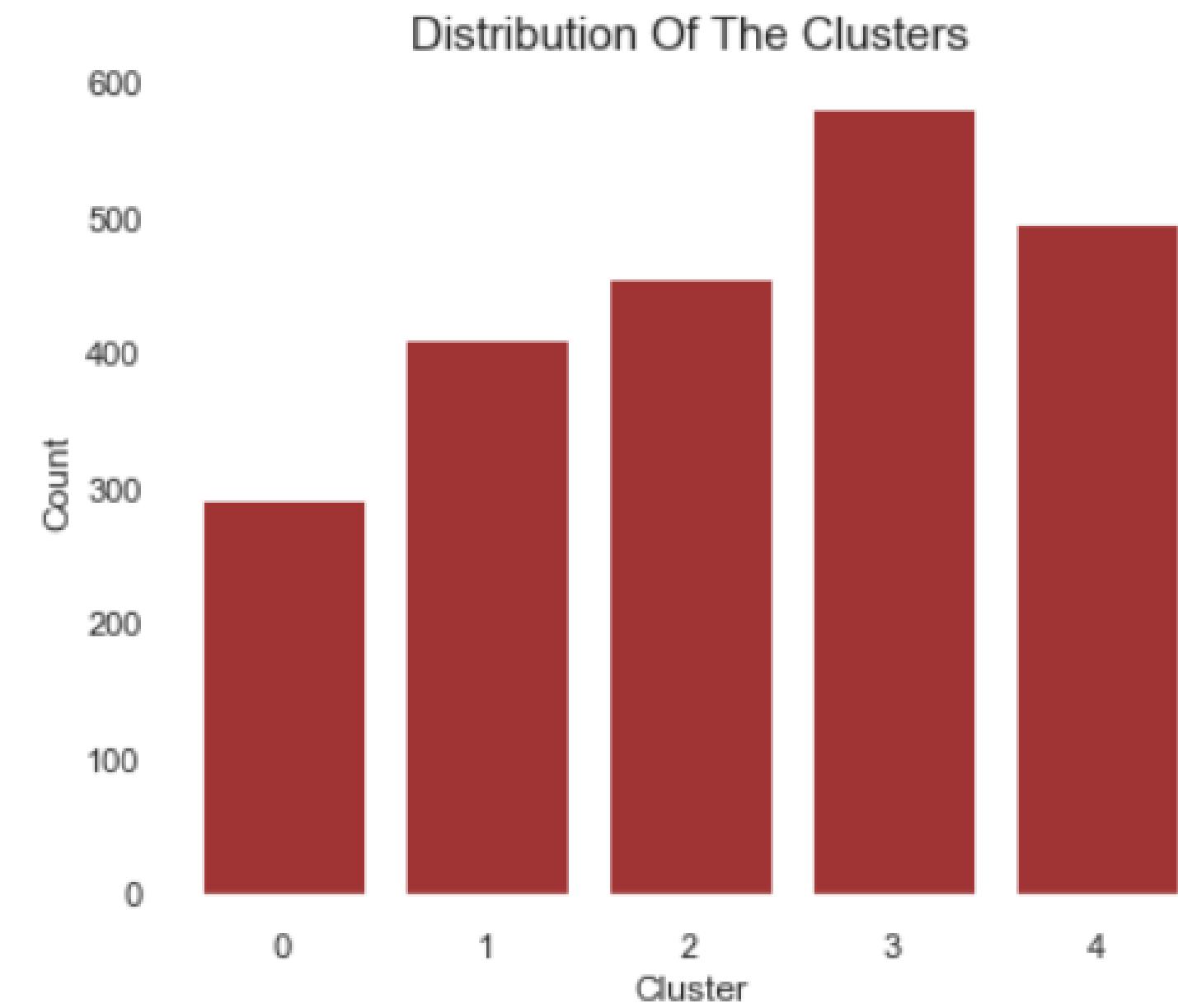
## Initial findings

- Higher income, higher spending on wines and meat products.
- Wines are often bought in Catalog and Store.
- Meat products are often bought in Store.
- Higher spending people often have fewer child.

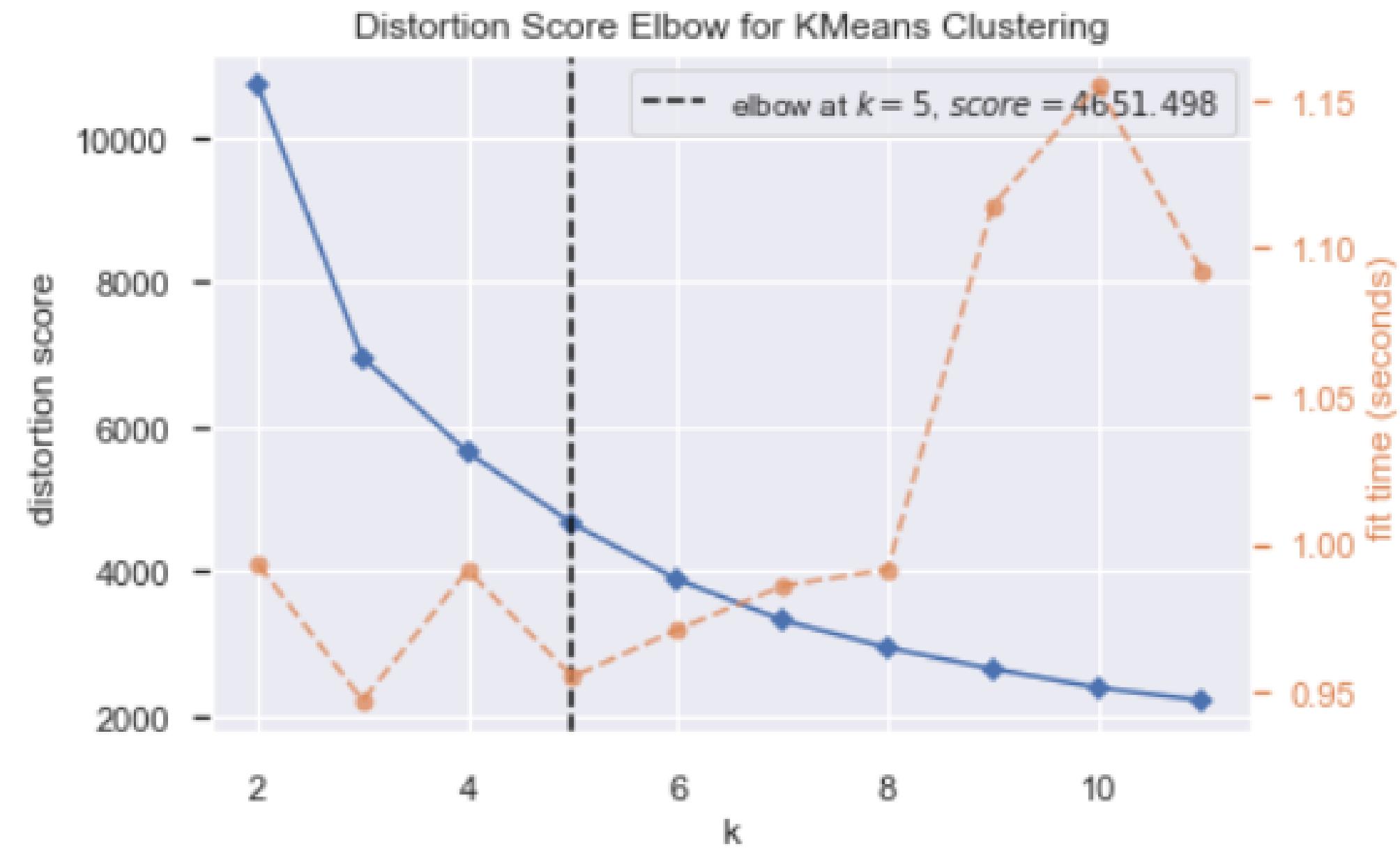


# 3. Segmentation findings

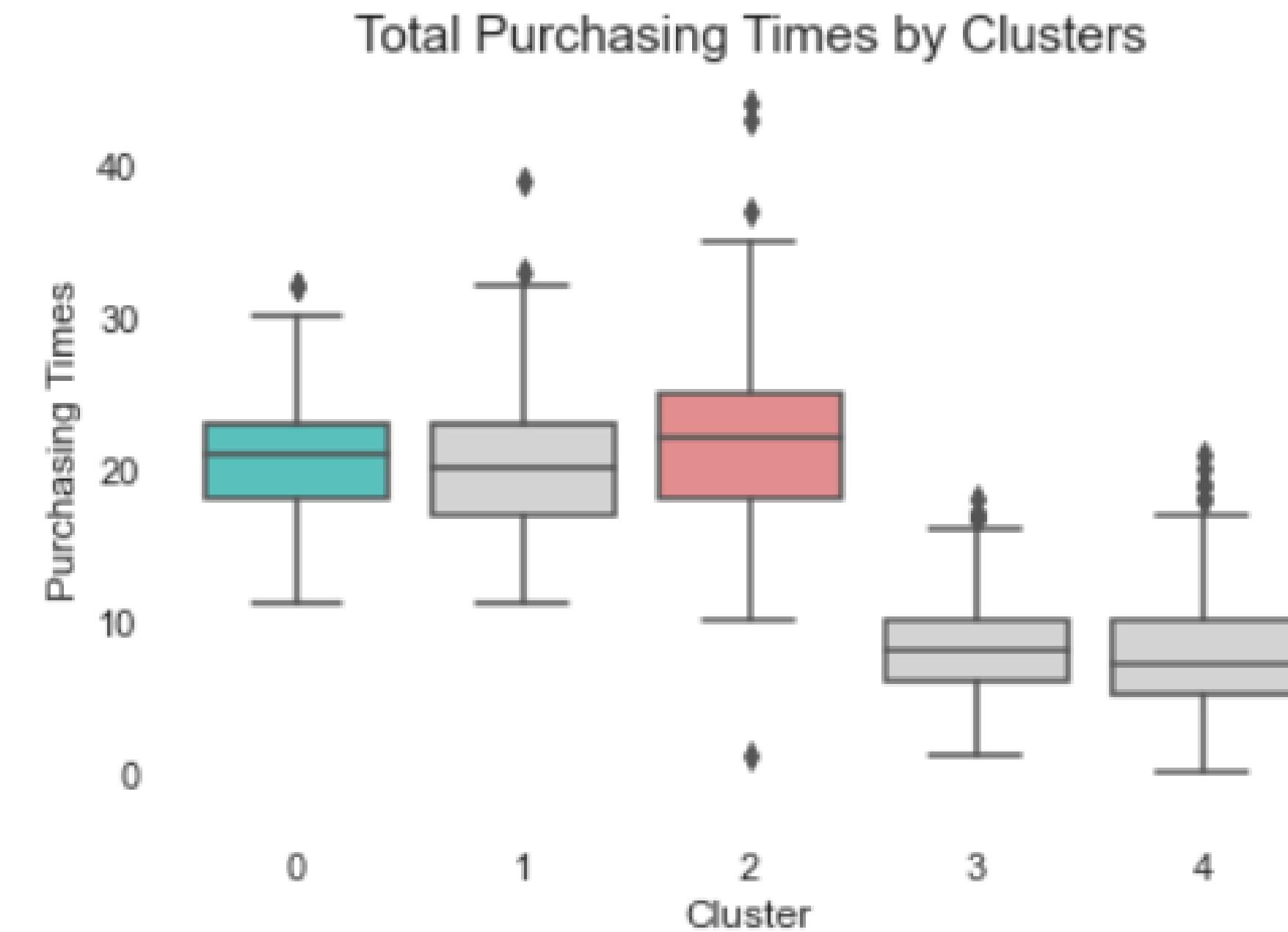
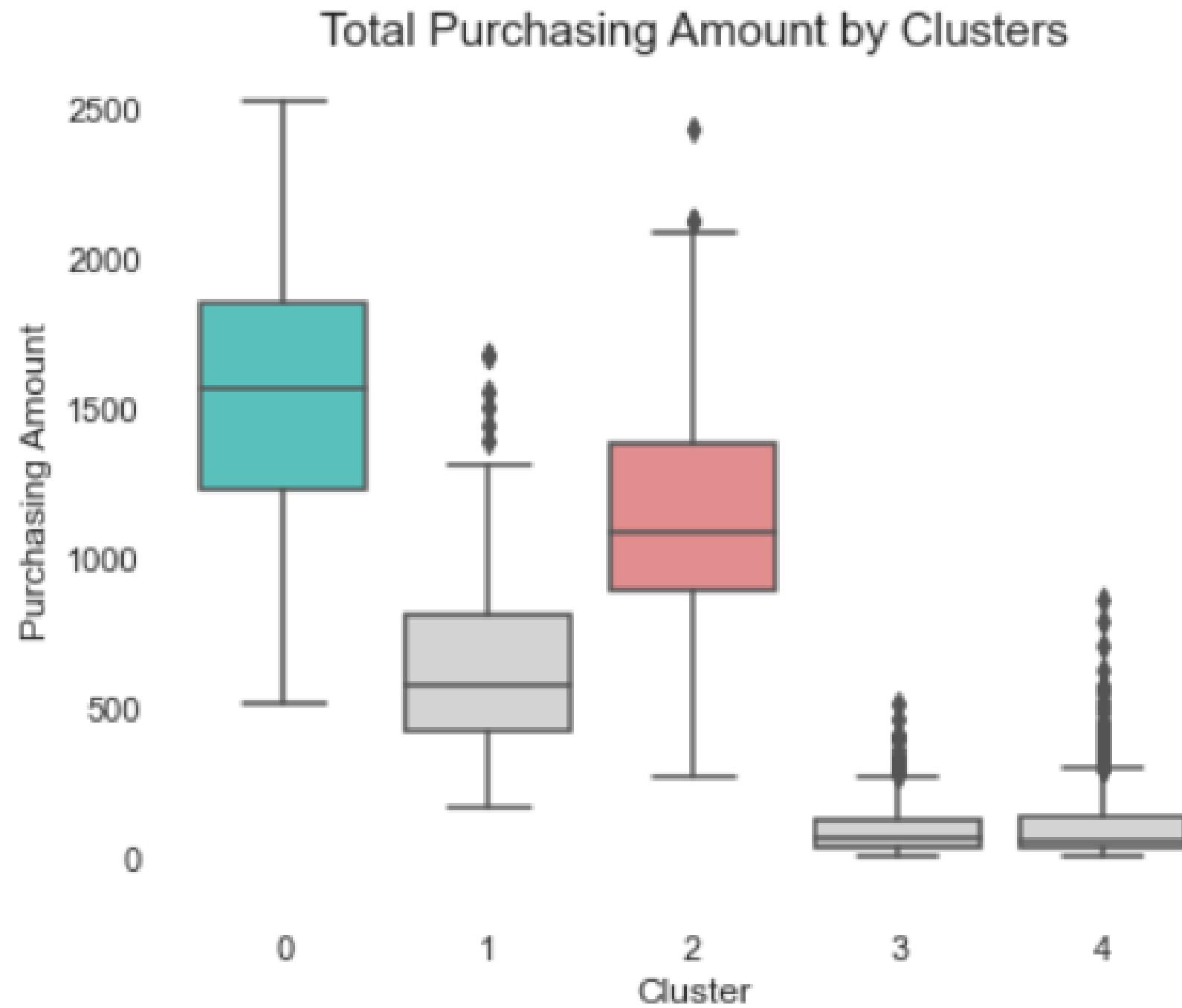
Divide the dataset into 5 clusters (or groups) from Cluster 0 to Cluster 4 by Kmeans and Elbow methods



# 3. Segmentation findings

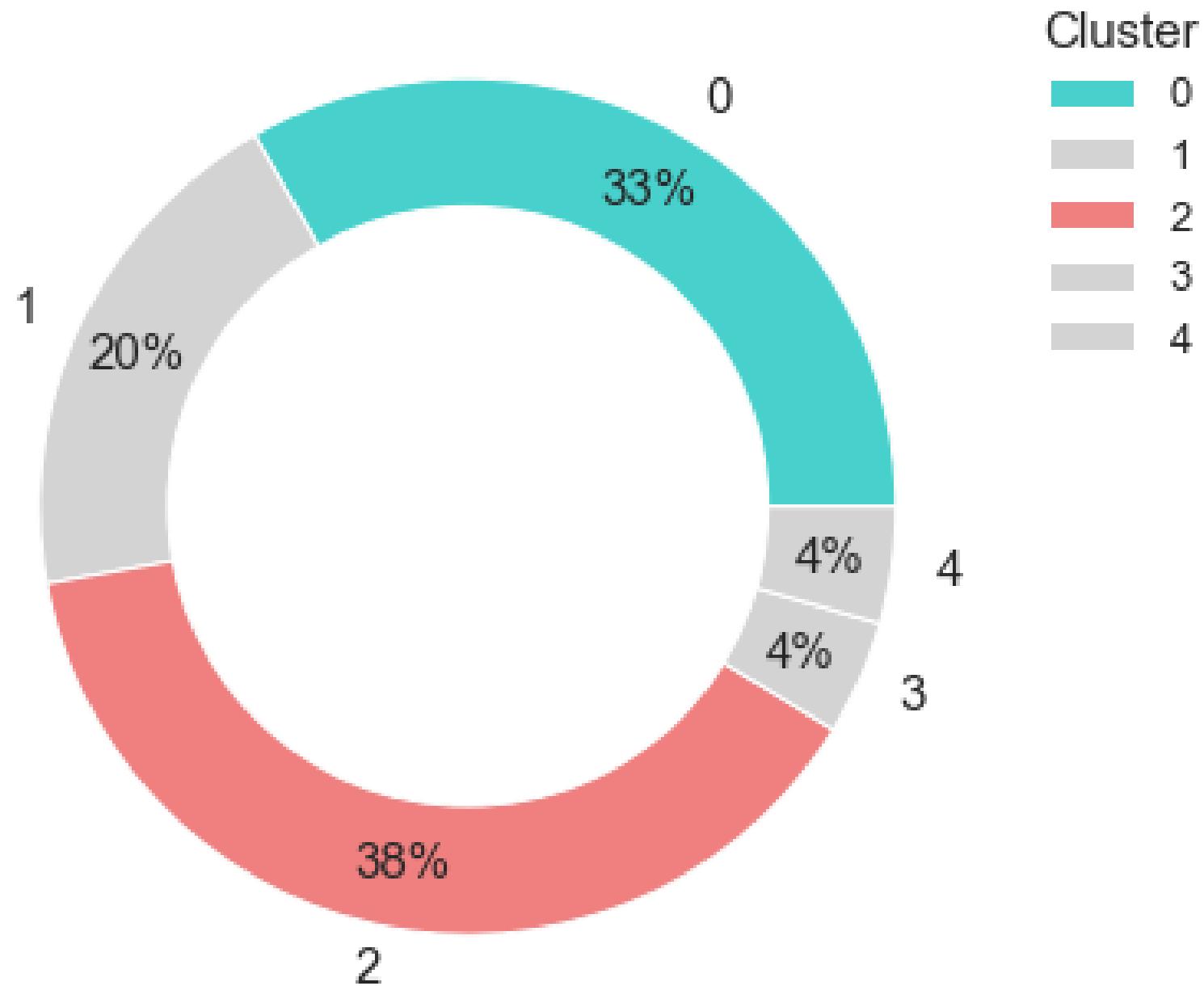


# 3. Segmentation findings

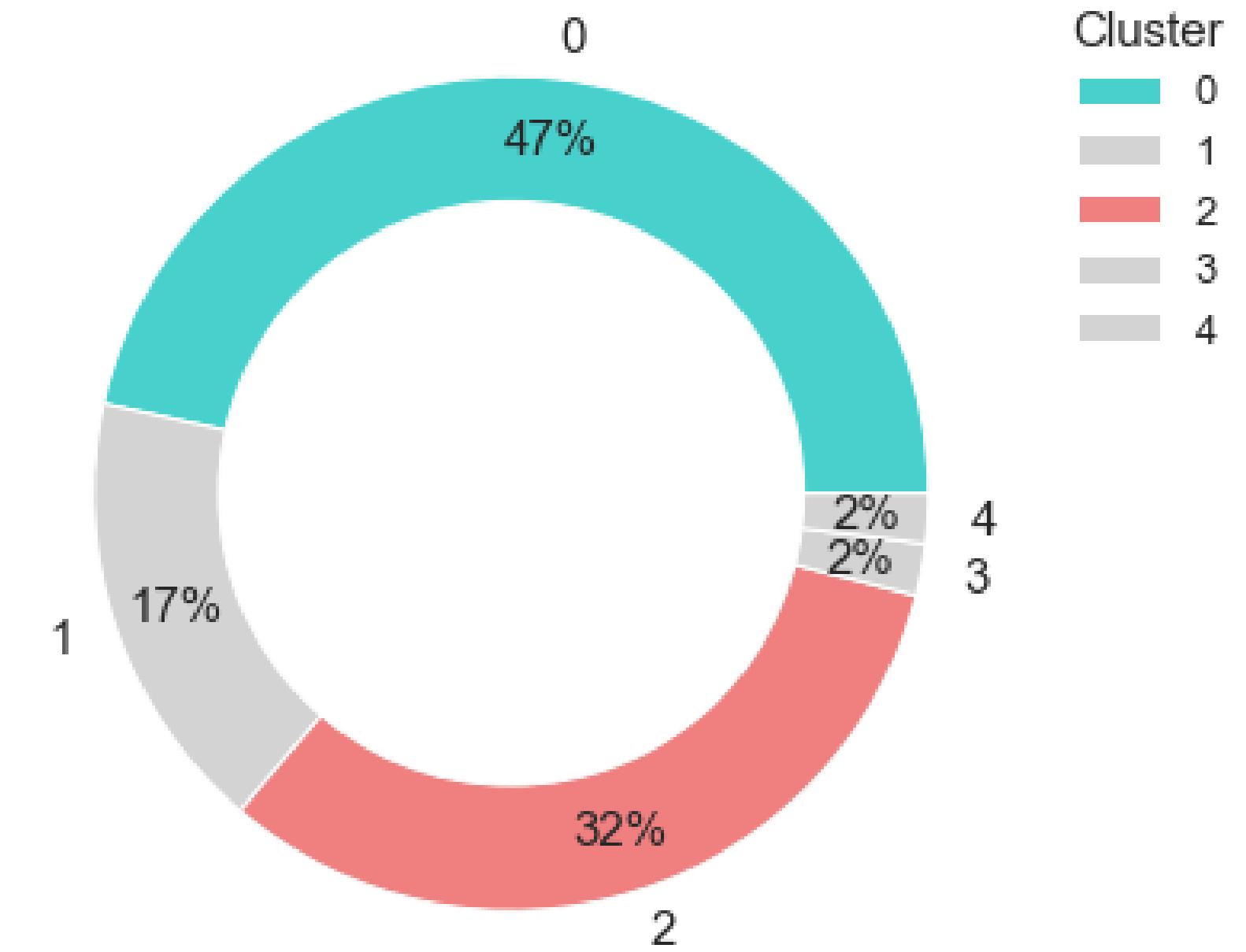


# 3. Segmentation findings

Total Purchasing Amount by Clusters

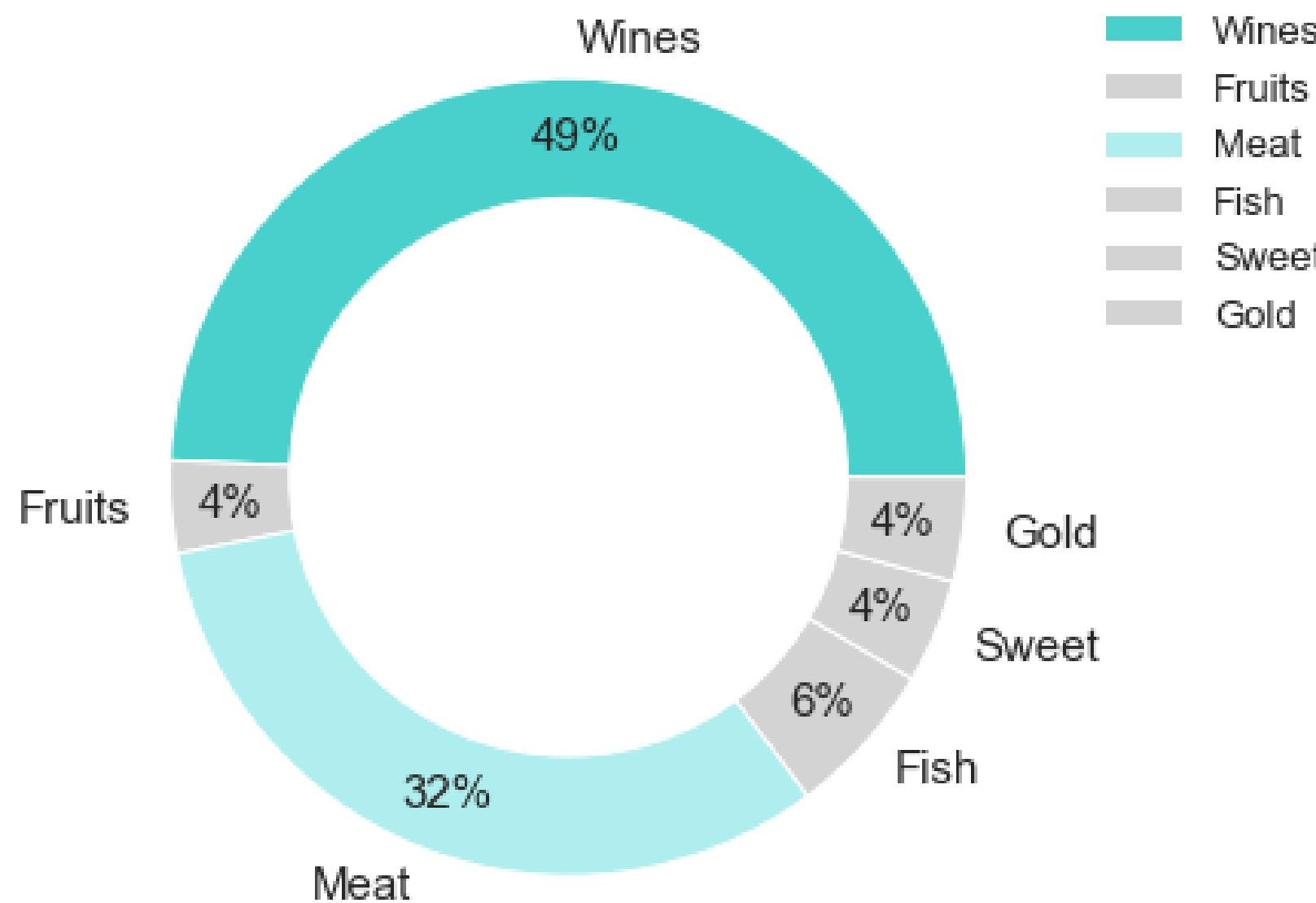


Median Purchasing Amount by Clusters

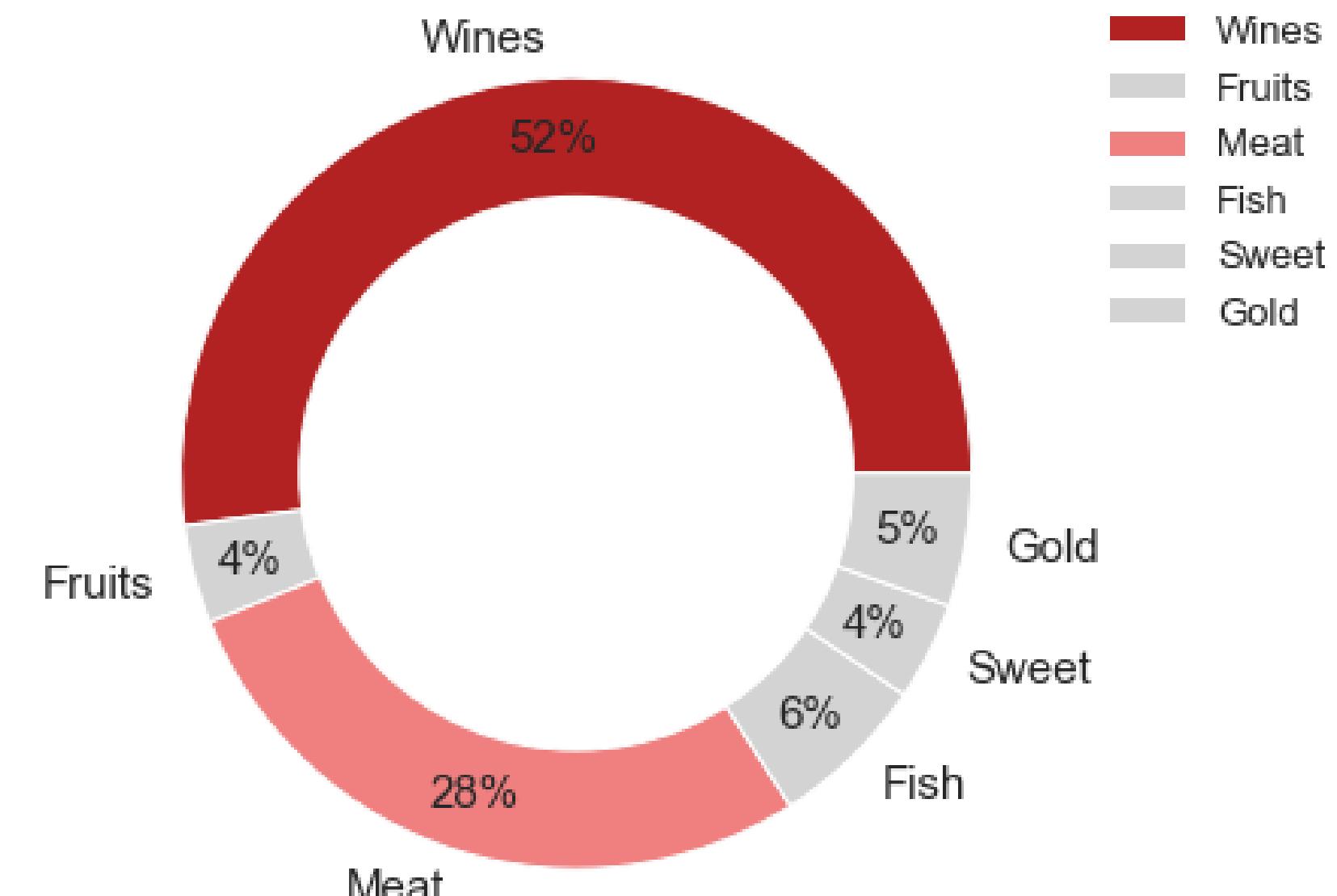


# 3. Segmentation findings

Median Purchased Amount of Products in Group 0

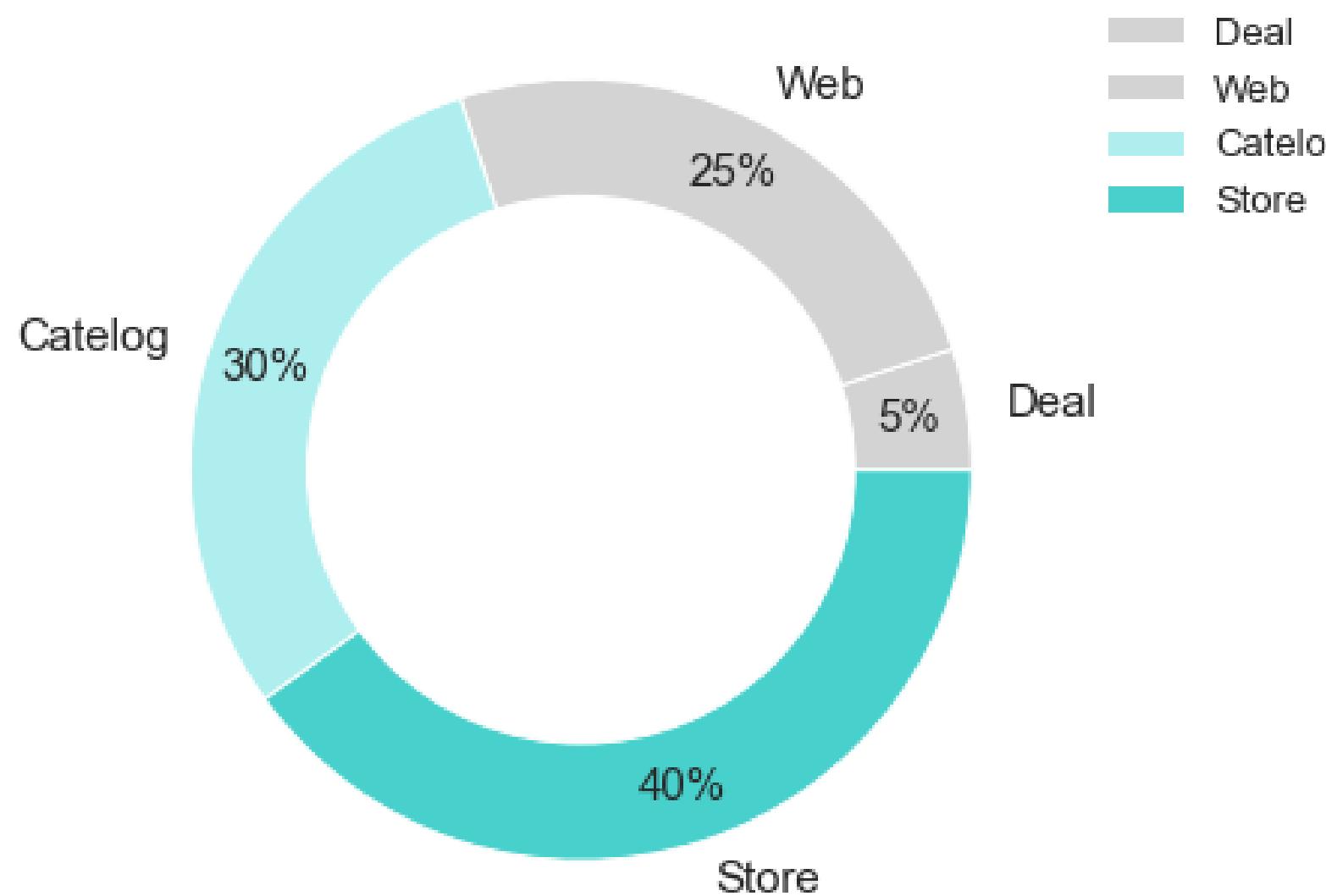


Median Purchased Amount of Products in Group 2

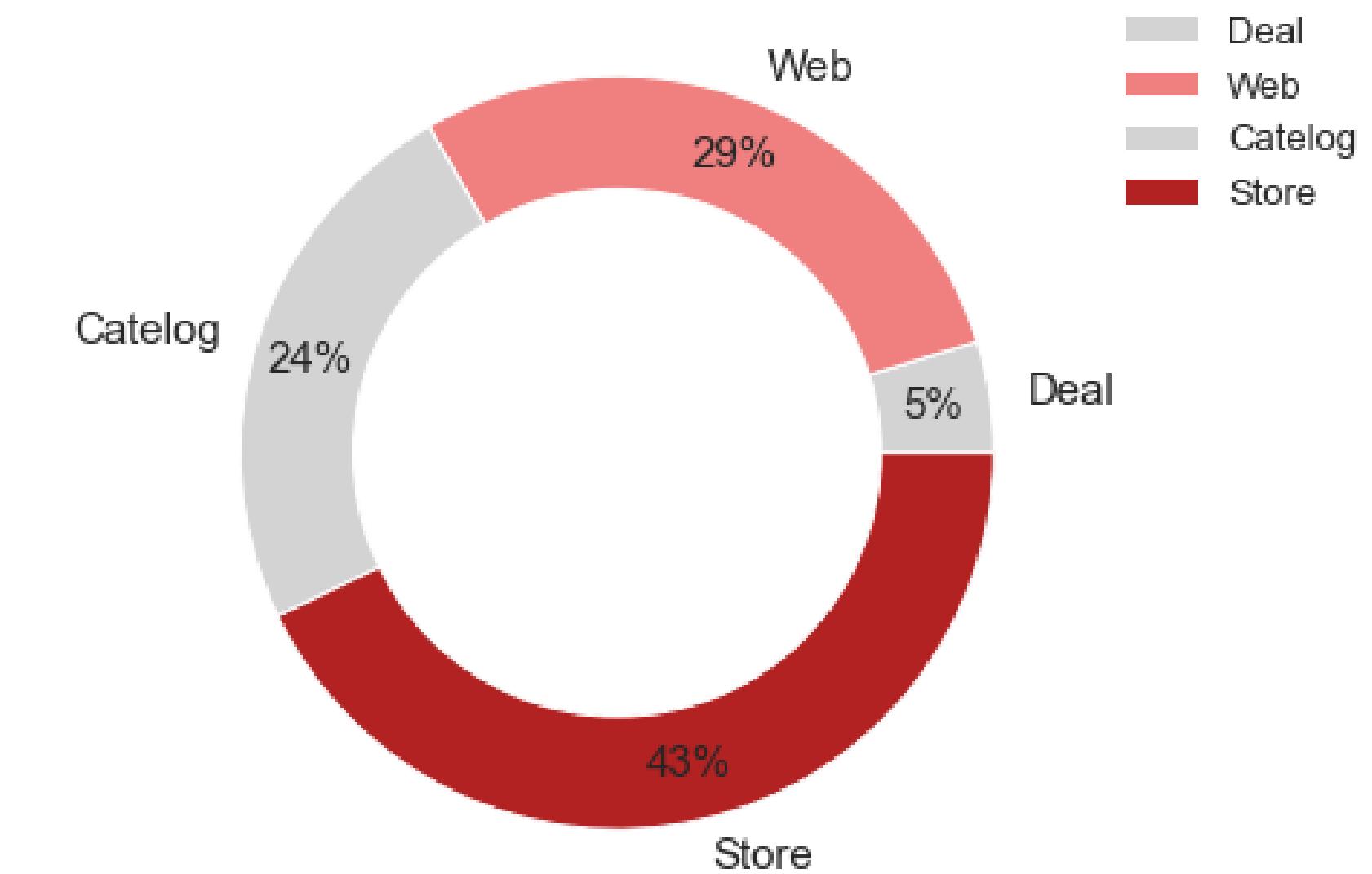


# 3. Segmentation findings

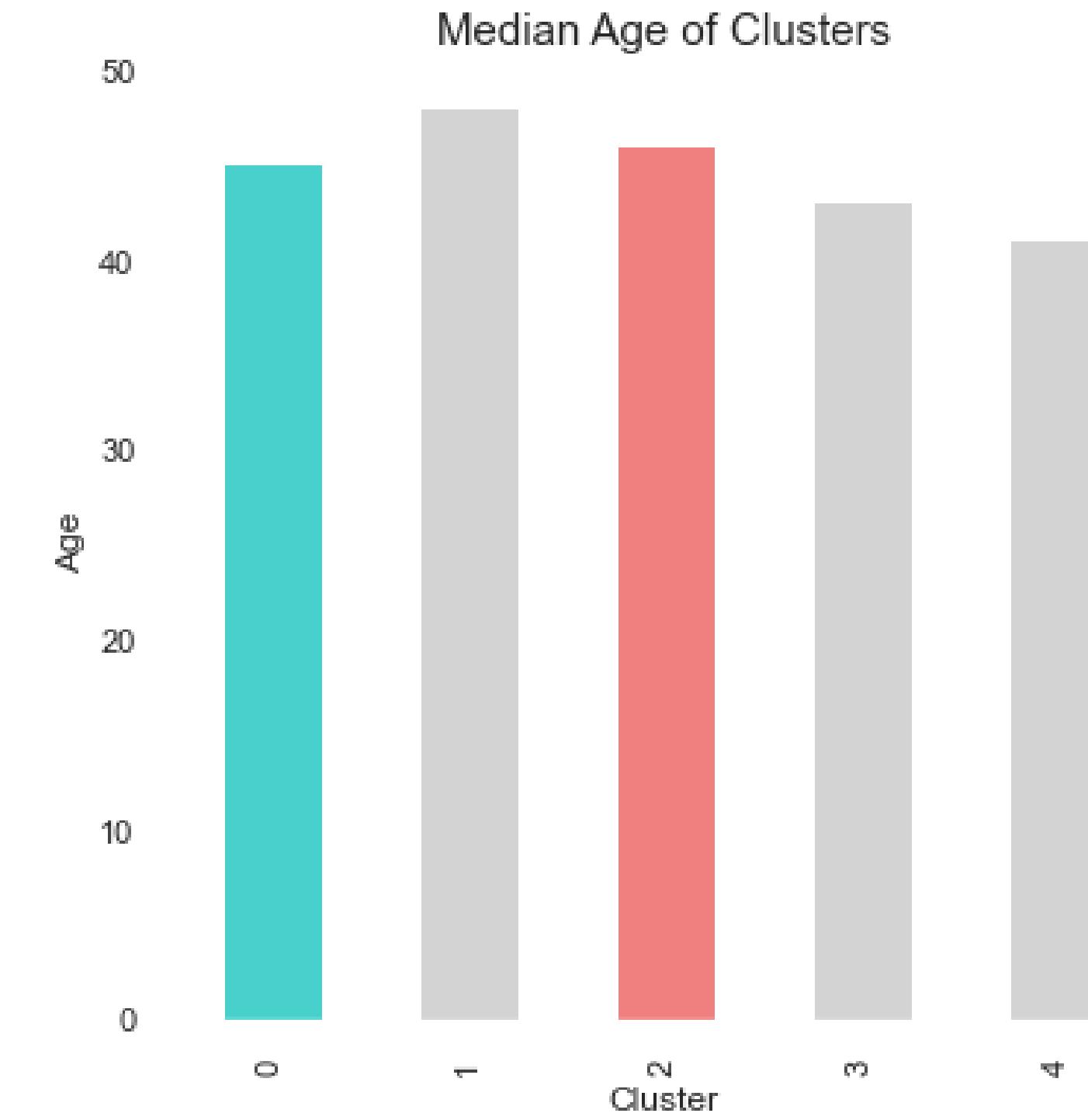
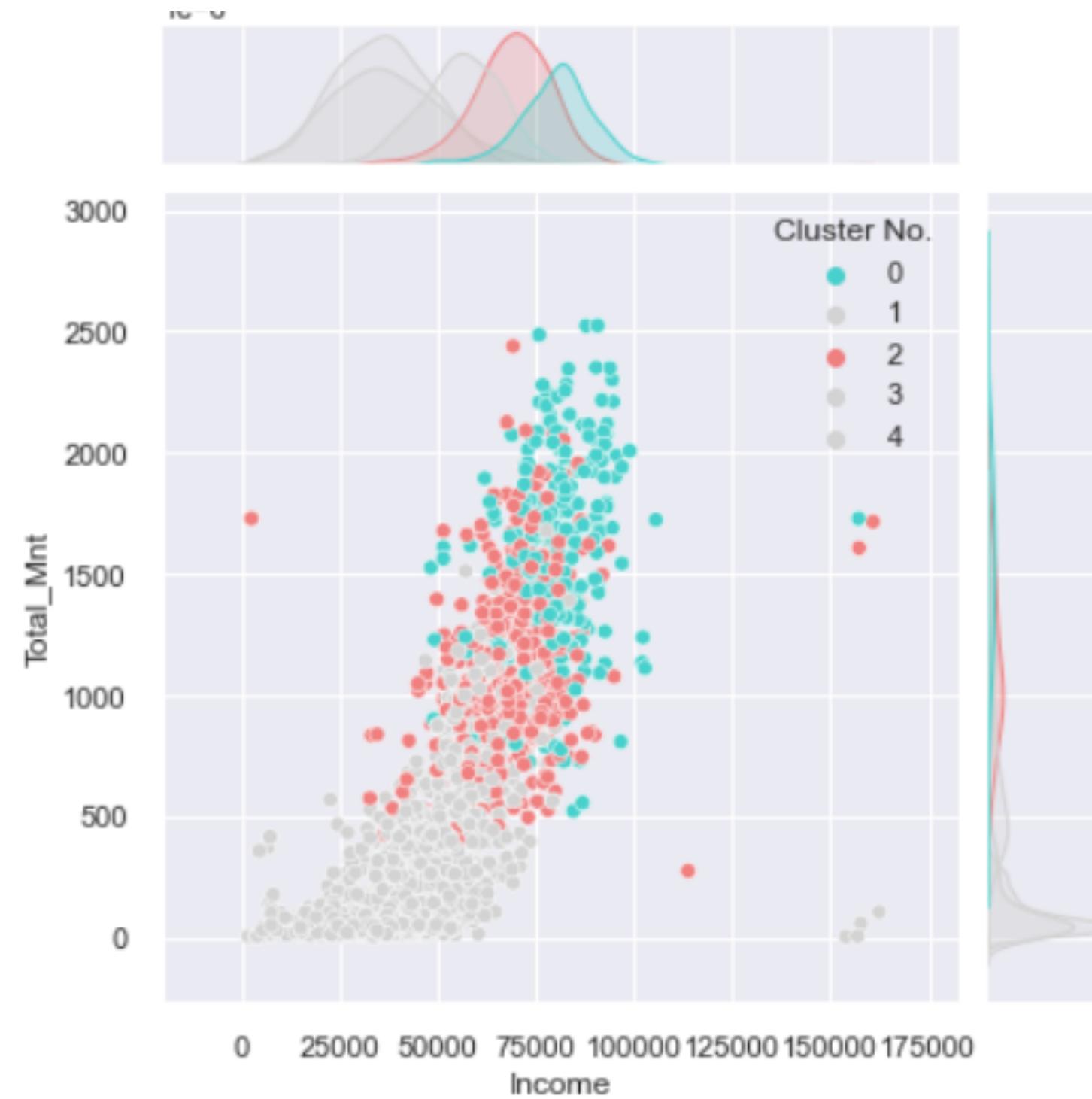
Median Multi-channel Purchases in Group 0



Median Multi-channel Purchases in Group 2

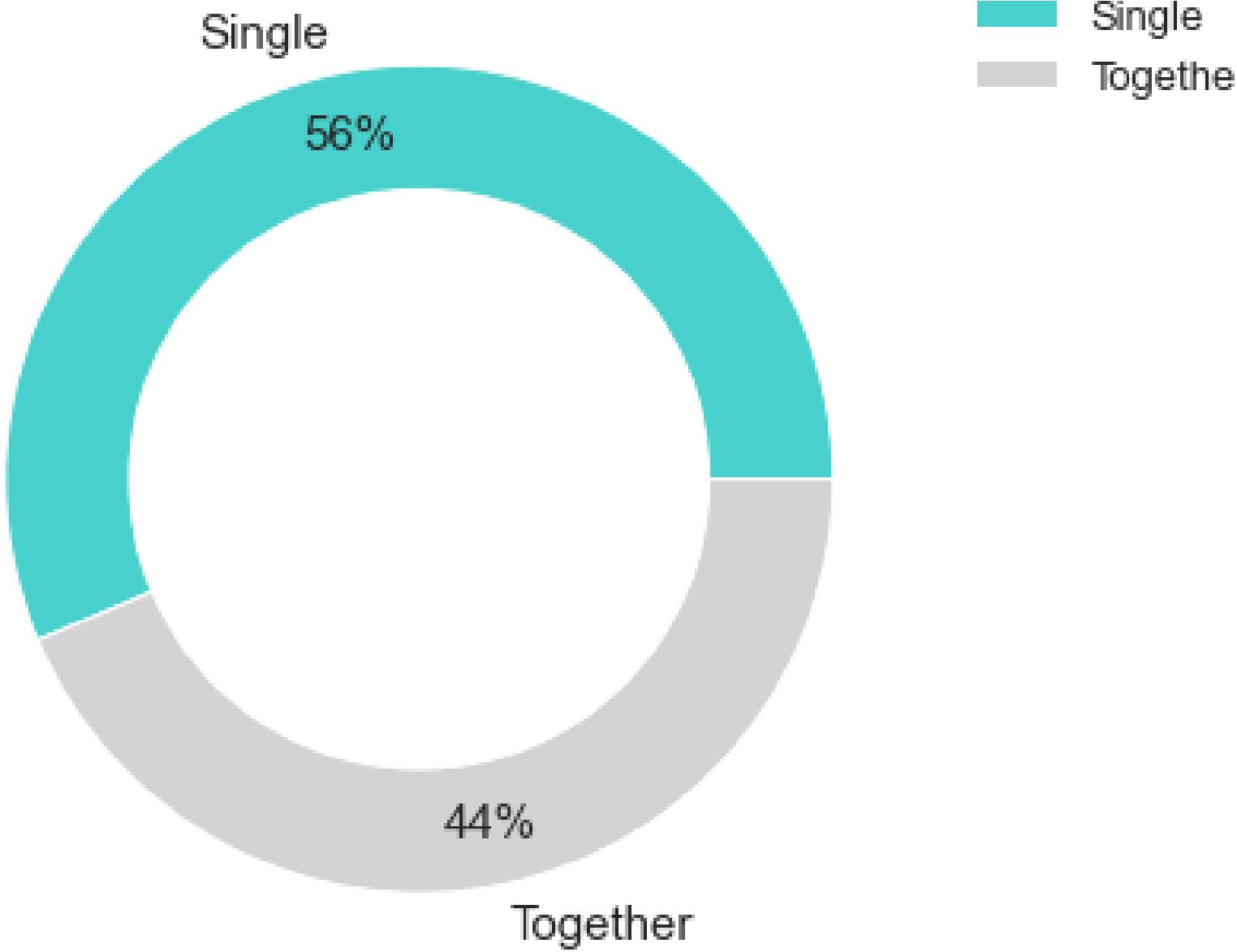


# 3. Segmentation findings

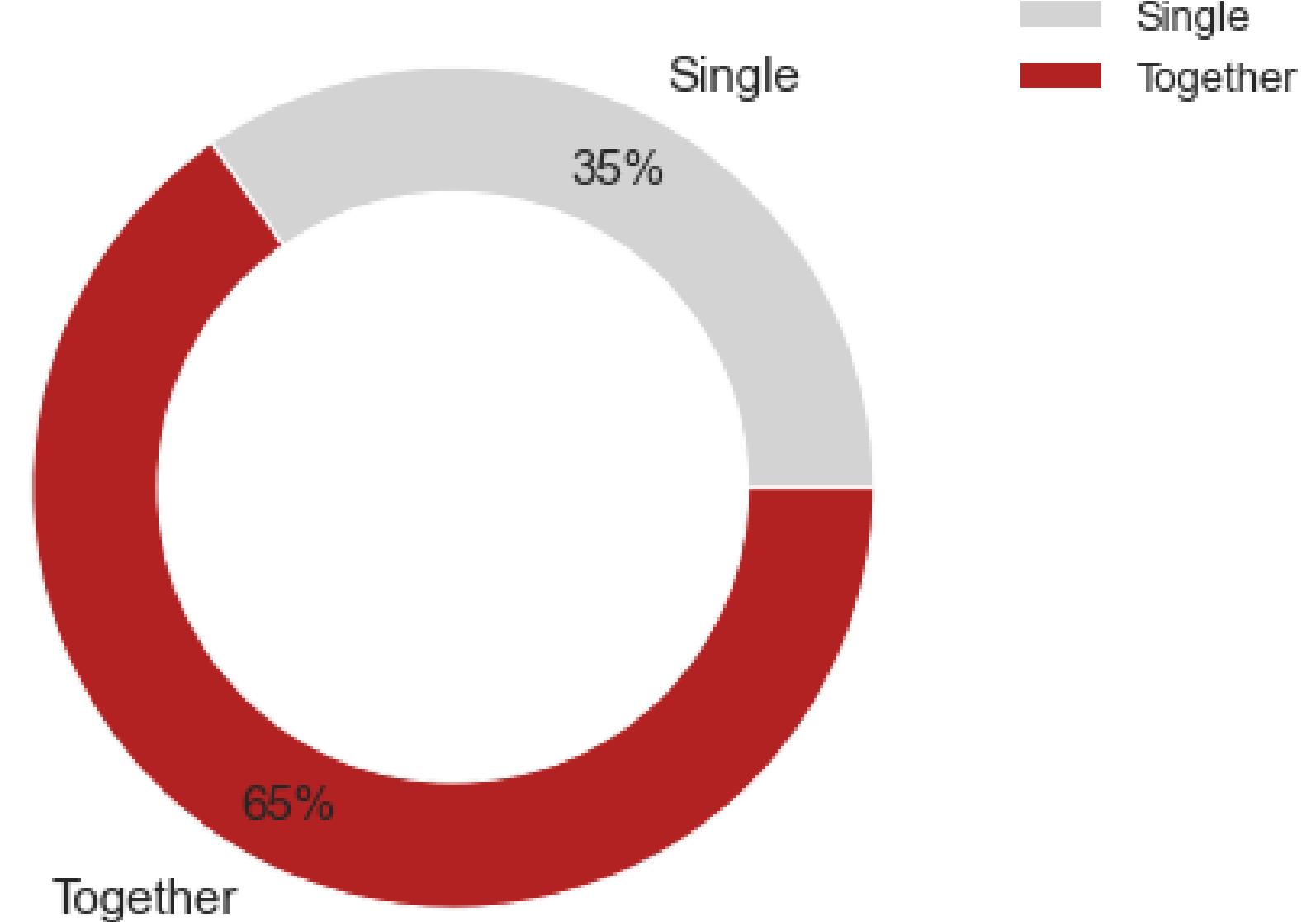


# 3. Segmentation findings

Living Status in Group 0

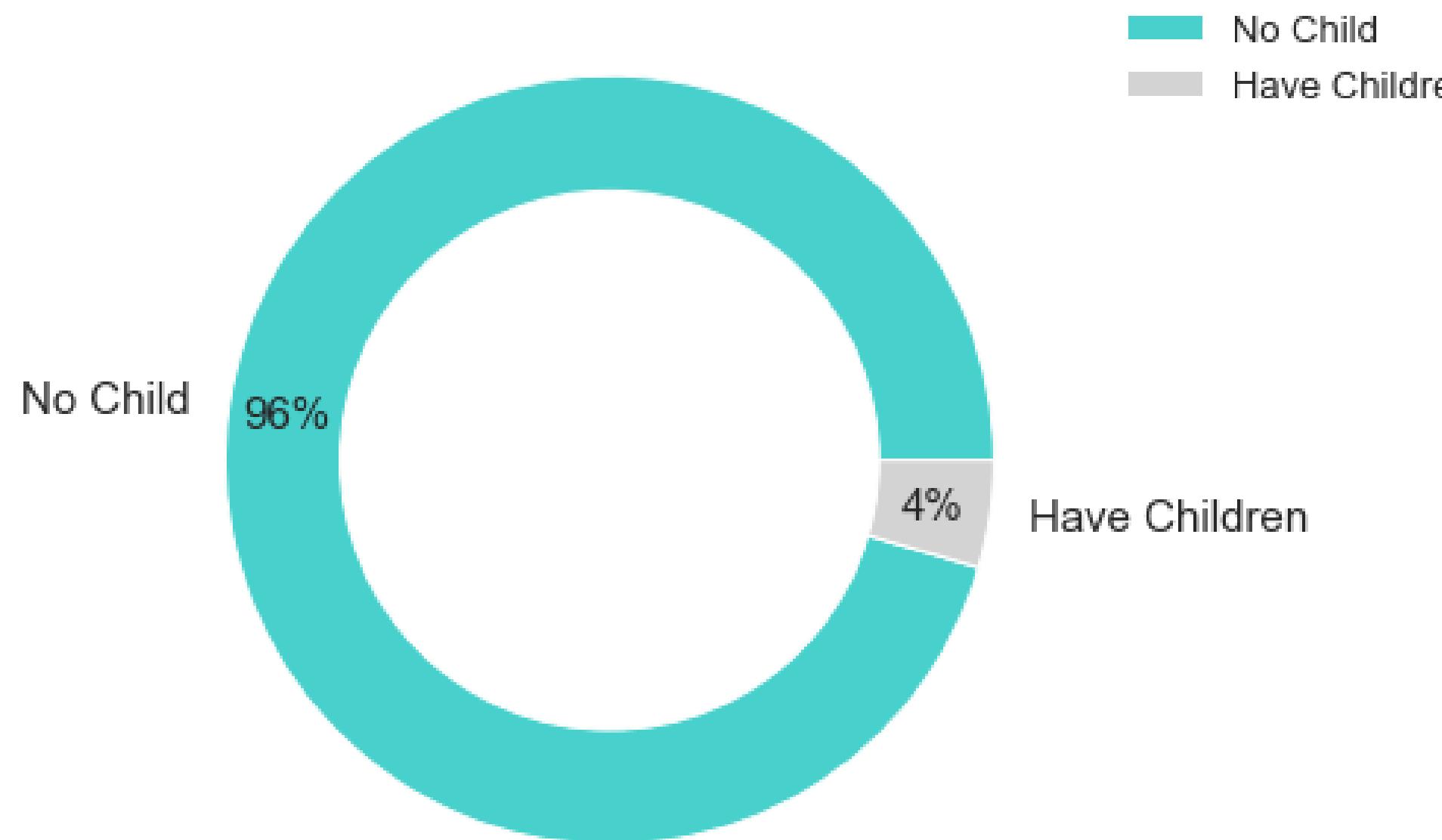


Living Status in Group 2

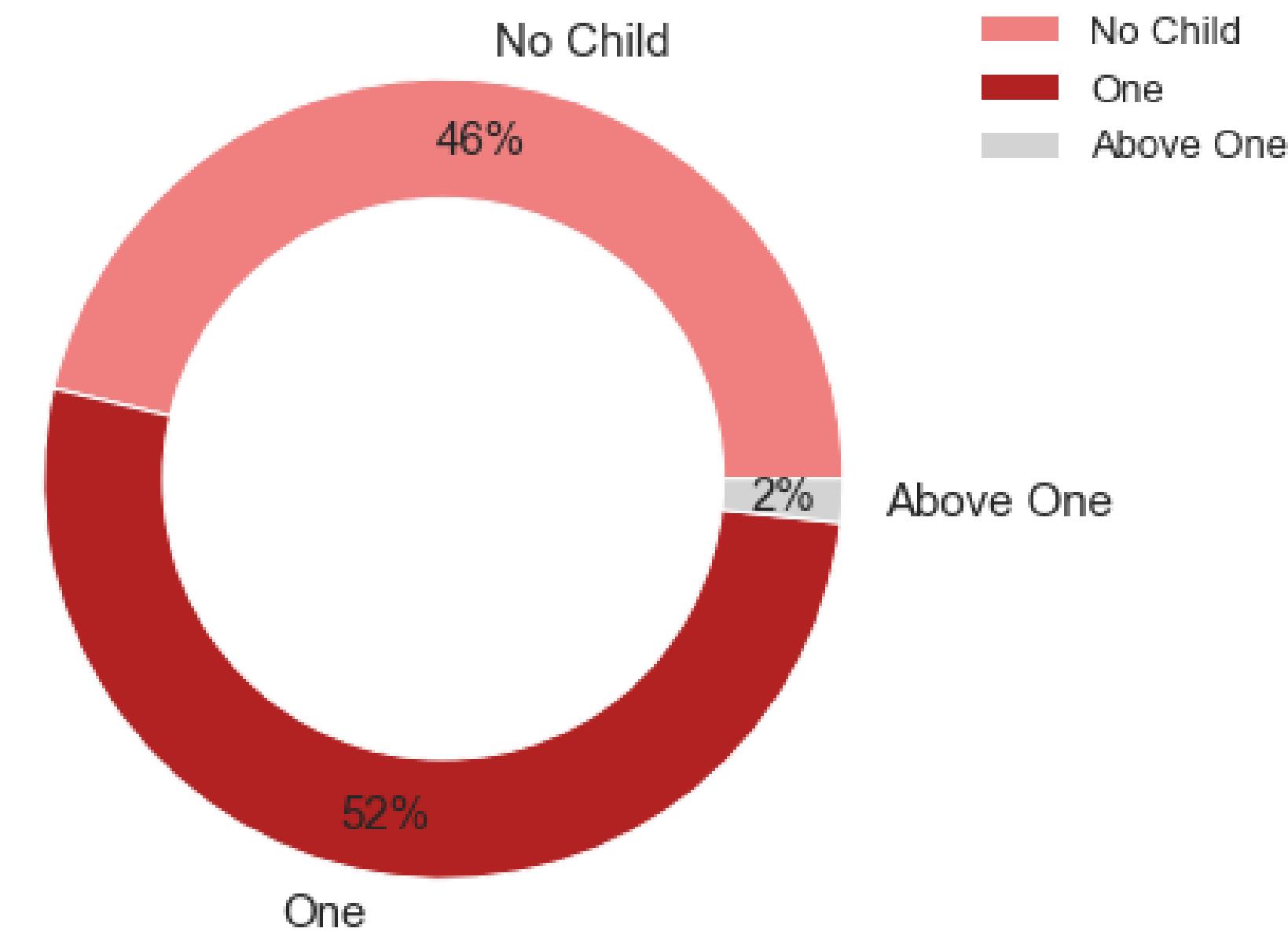


# 3. Segmentation findings

Number of children in Group 0

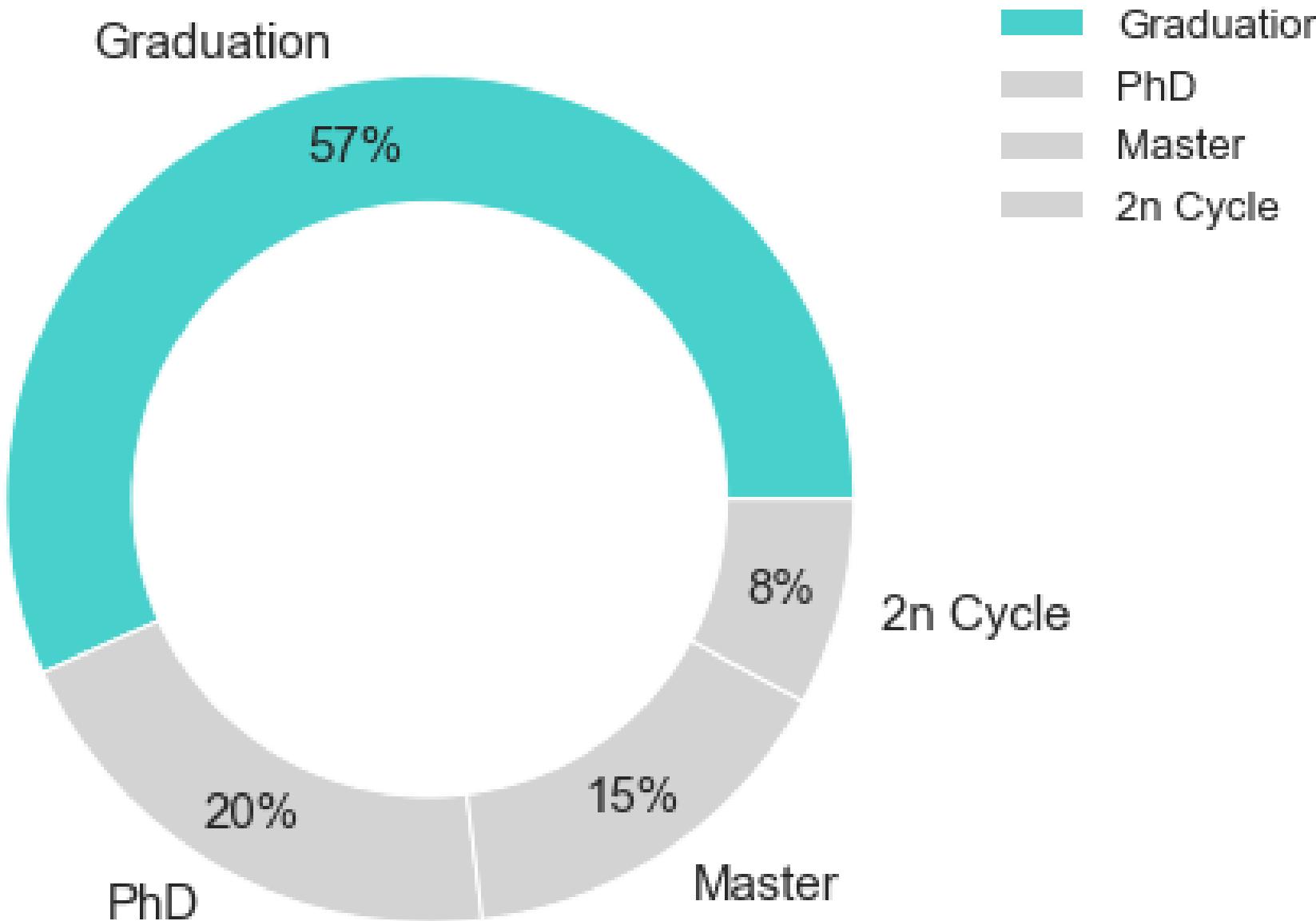


Number of children in Group 2

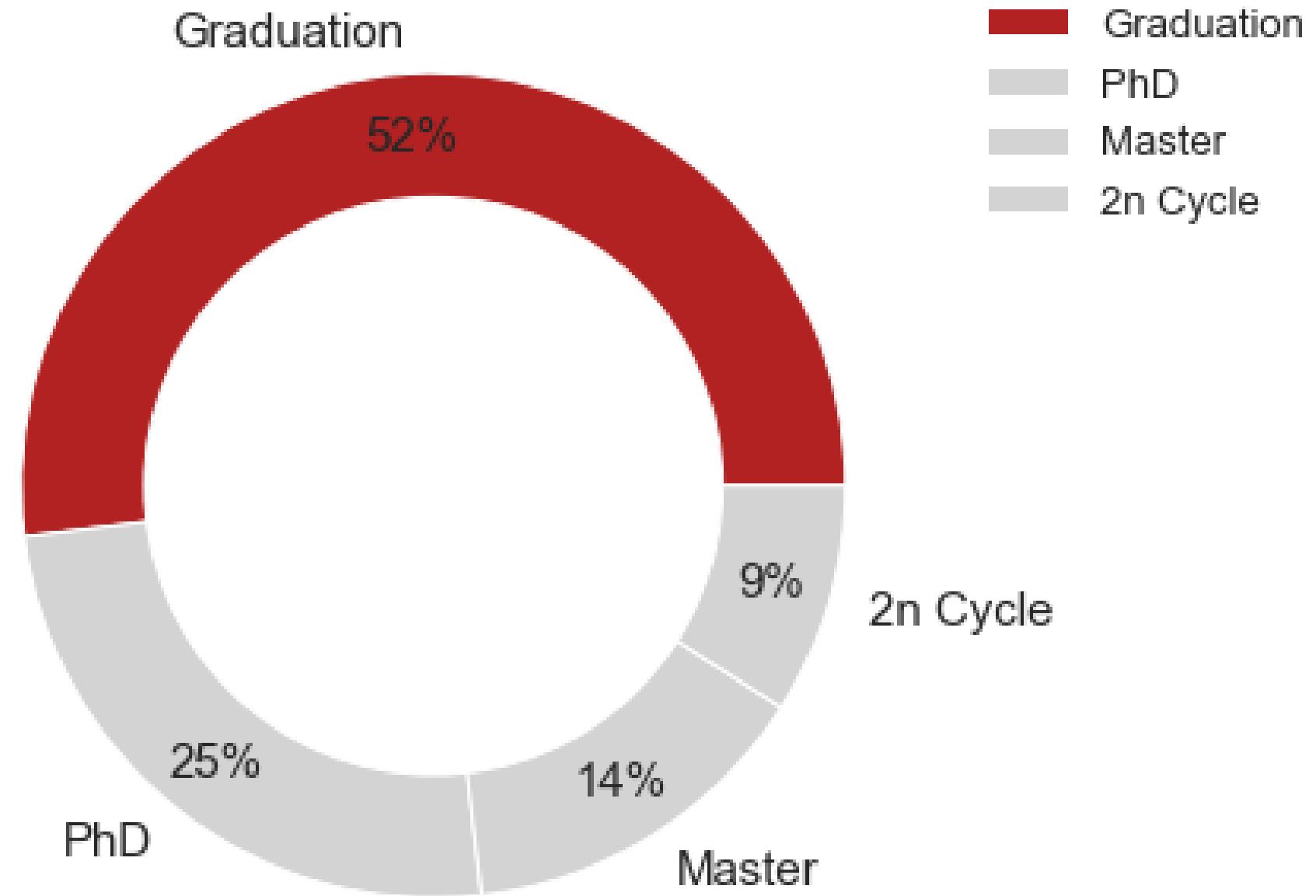


# 3. Segmentation findings

Education Level in Group 0



Education Level in Group 2



# 3. Segmentation findings

## Group 0

18% of total customers

Categories: WINE and MEAT

Channels: STORE and CATALOG

Median income: approx. 81,000\$

Median age: 45

Have NO CHILDREN

## Group 2

20% of total customers

Categories: WINE and MEAT

Channels: STORE and WEB

Median income: approx. 70,000\$

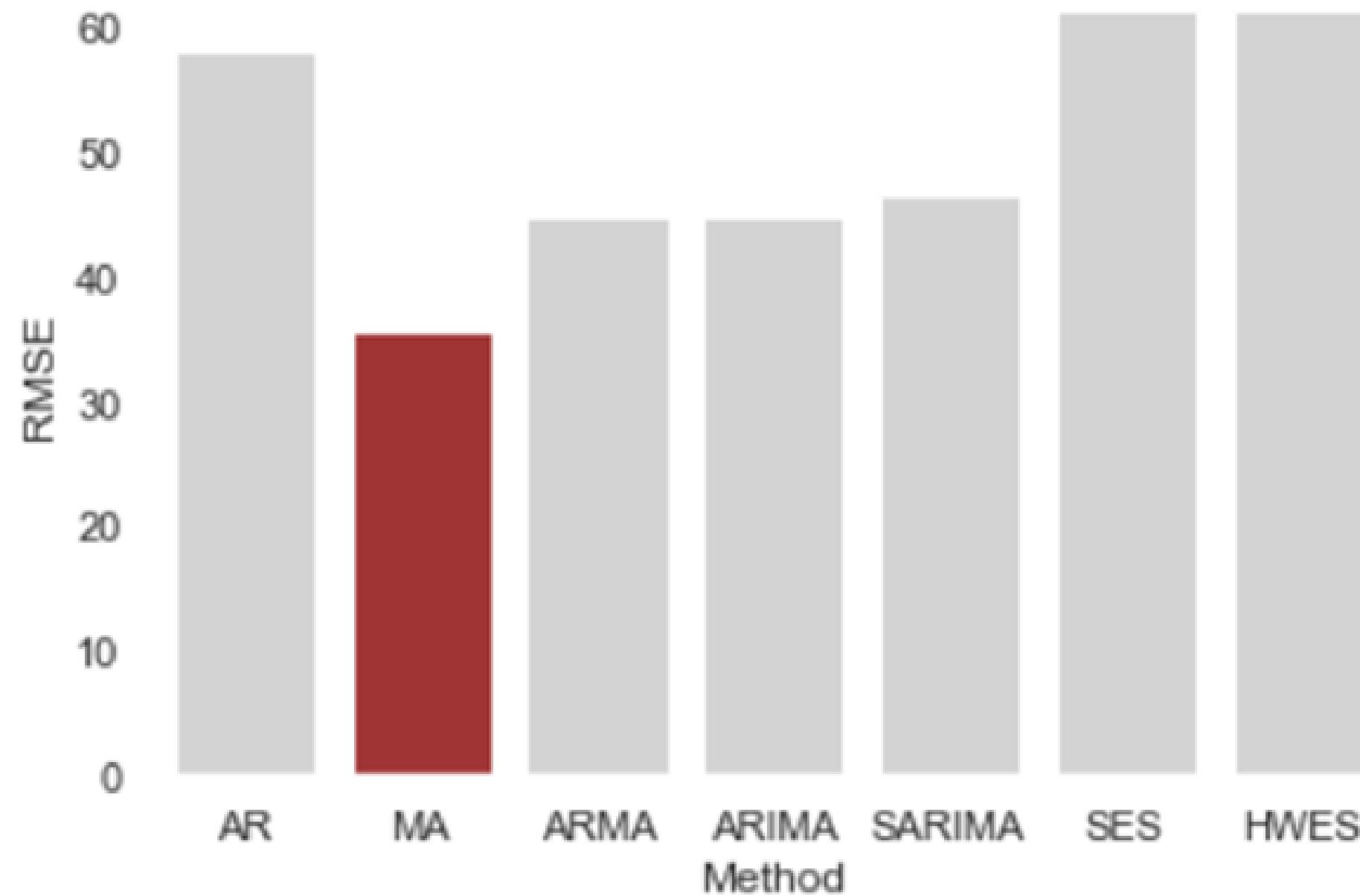
Median age: 46

Living status: TOGETHER

<= 1 CHILDREN

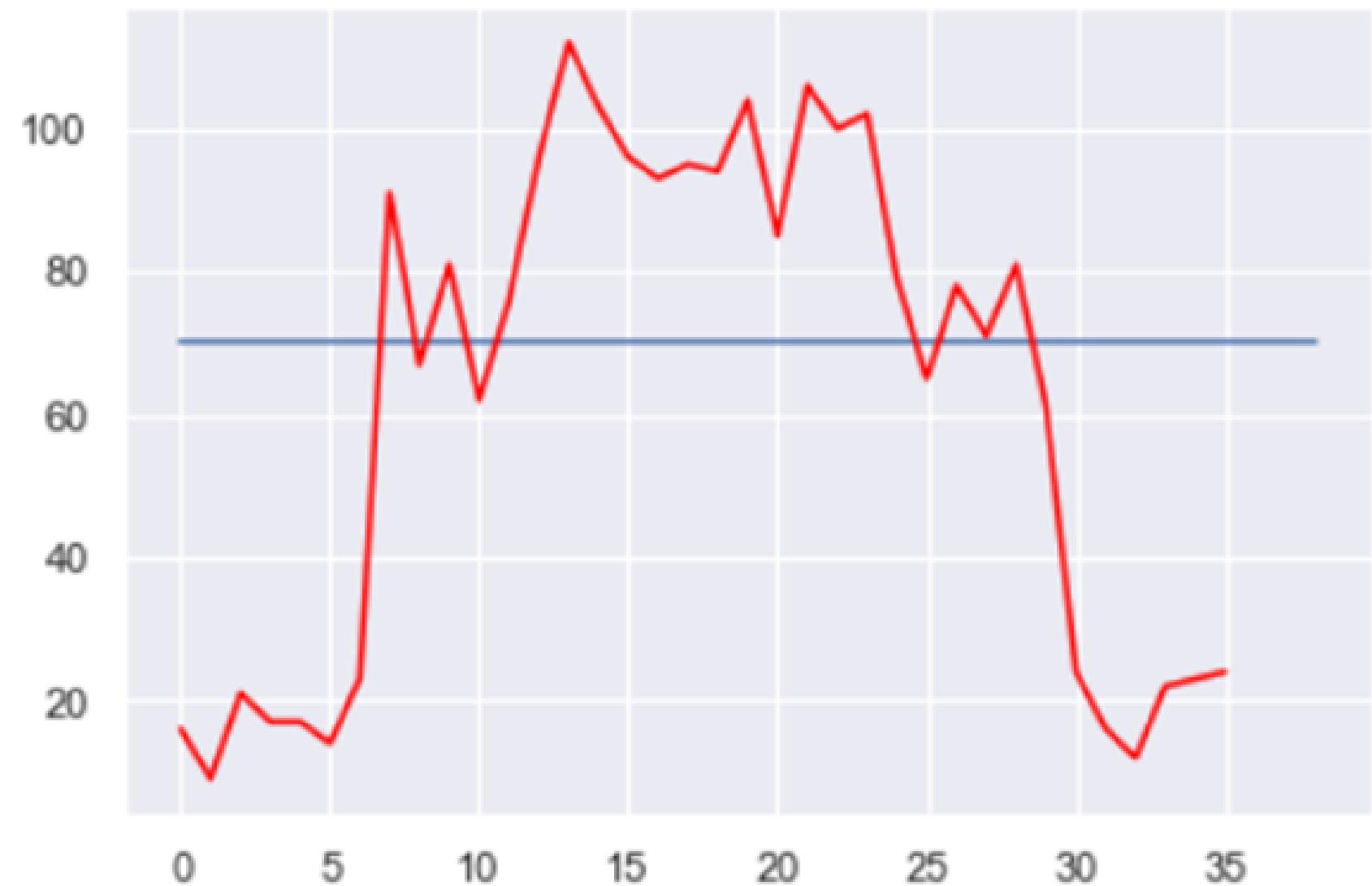
# 4. Predicting enrollment

Moving Average  
method is most  
appropriate



# 4. Predicting enrollment

Monthly newcomers  
from 2012 and 2014  
compare with  
that of MA model



# Thank you for listening!

Group 2 would now be interested to hear from you with your thoughts or questions.

