

A close-up photograph of a person's hands interacting with a laptop keyboard. One hand is resting on the keyboard, while the other is positioned above it, suggesting they are either typing or about to type. The background is dark, making the light-colored laptop and hands stand out.

# Blackwell Electronics

---

UNDERSTANDING CUSTOMERS



# Index

01

INTRODUCTION

02

CUSTOMER BUYING PATTERNS

03

CUSTOMER DEMOGRAPHICS

04

CONCLUSIONS

# Introduction

Blackwell has been a successful electronics retailer for over three decades, with over numerous stores in various locations. A little over a year ago we launched our eCommerce website. We are starting to build up customer transaction data from the site and we want to leverage this data to inform our decisions about site-related activities, like online marketing, enhancements to the site and so on, in order to continue to maximize the amount of revenue we generate from eCommerce sales.

# Customer buying patterns

- Do customers in different regions spend more per transaction? Which regions spend the most/least?
- Is there a relationship between number of items purchased and amount spent?



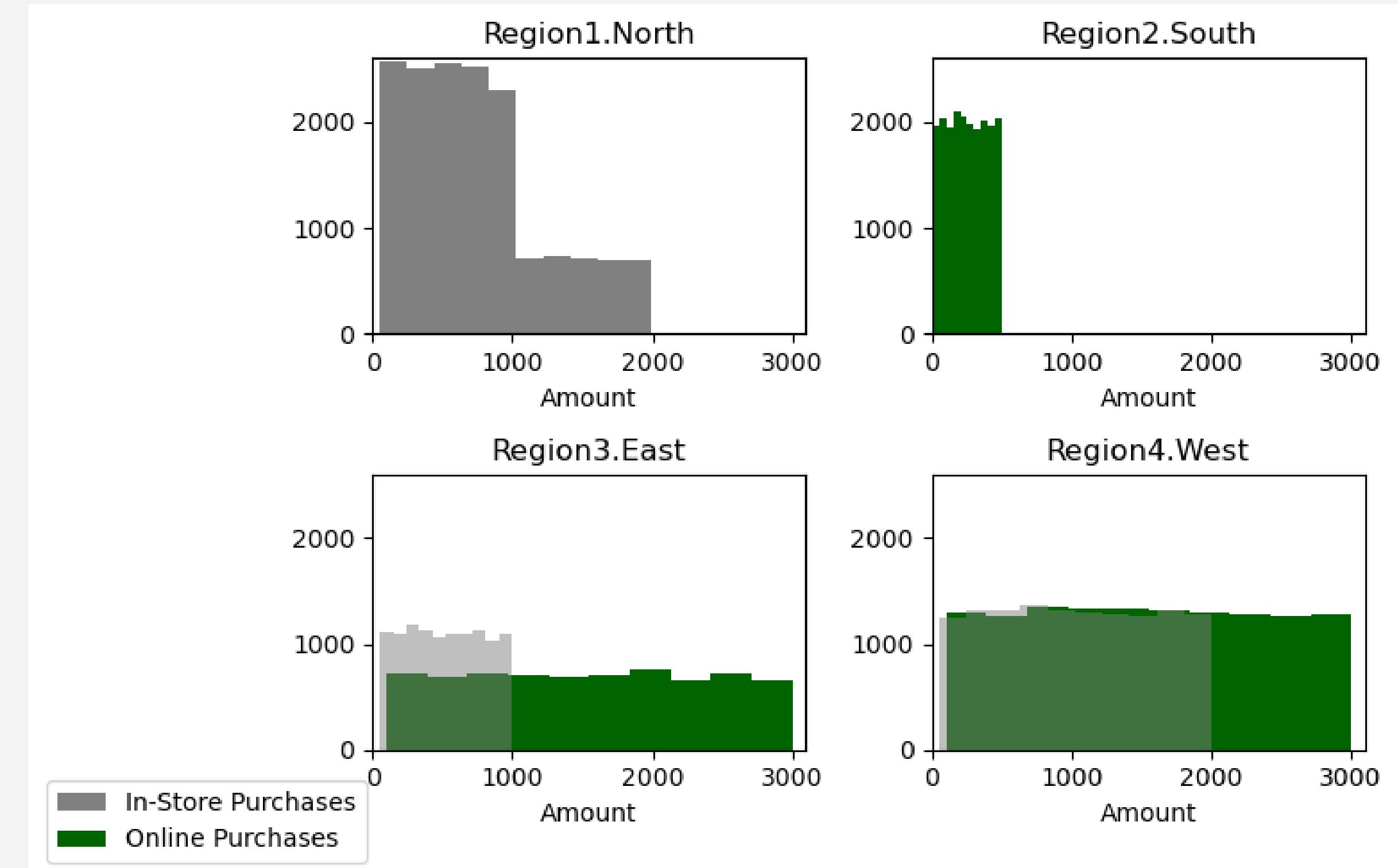
# Where do our customers buy?



**Region north can only buy in-store and region south can only buy online.** Region east prefers buying on-site whilst region west doesn't make any difference between online and on-site.

# Amount spent by region

- The **amount from online purchases is higher** than the amount from on-site purchases.
- **Regions East and West spend more per transaction.**
- We can notice we have some amount **restrictions:**
  - Region east have a maximum limit of 1000\$ when buying on-site.
  - Region south have a maximum limit of 500\$ when buying online.



# Mean spent by region

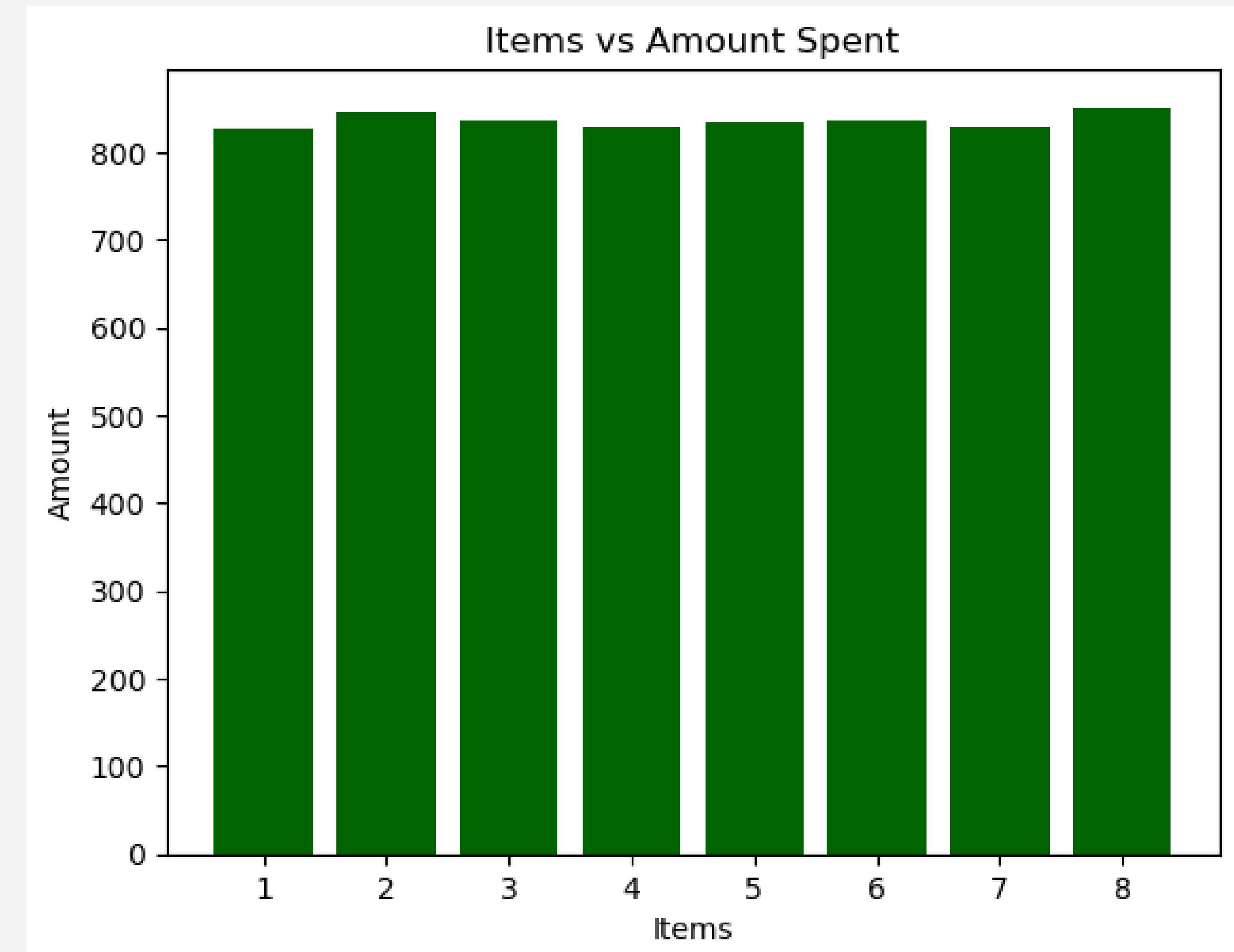
- The **amount from online purchases is higher** than the amount from on-site purchases.
- **Regions East and West spend more per transaction.**
- We can notice we have some amount **restrictions**:
  - Region east have a maximum limit of 1000\$ when buying on-site.
  - Region south have a maximum limit of 500\$ when buying online.



# Amount spent per items

As we can see, the mean of the amount spent per item is very similar in all the cases (around 800\$).

**So we could say that the number of items doesn't have a relationship with the amount spent but it does with the price of the products they buy.**



# Customer demographics

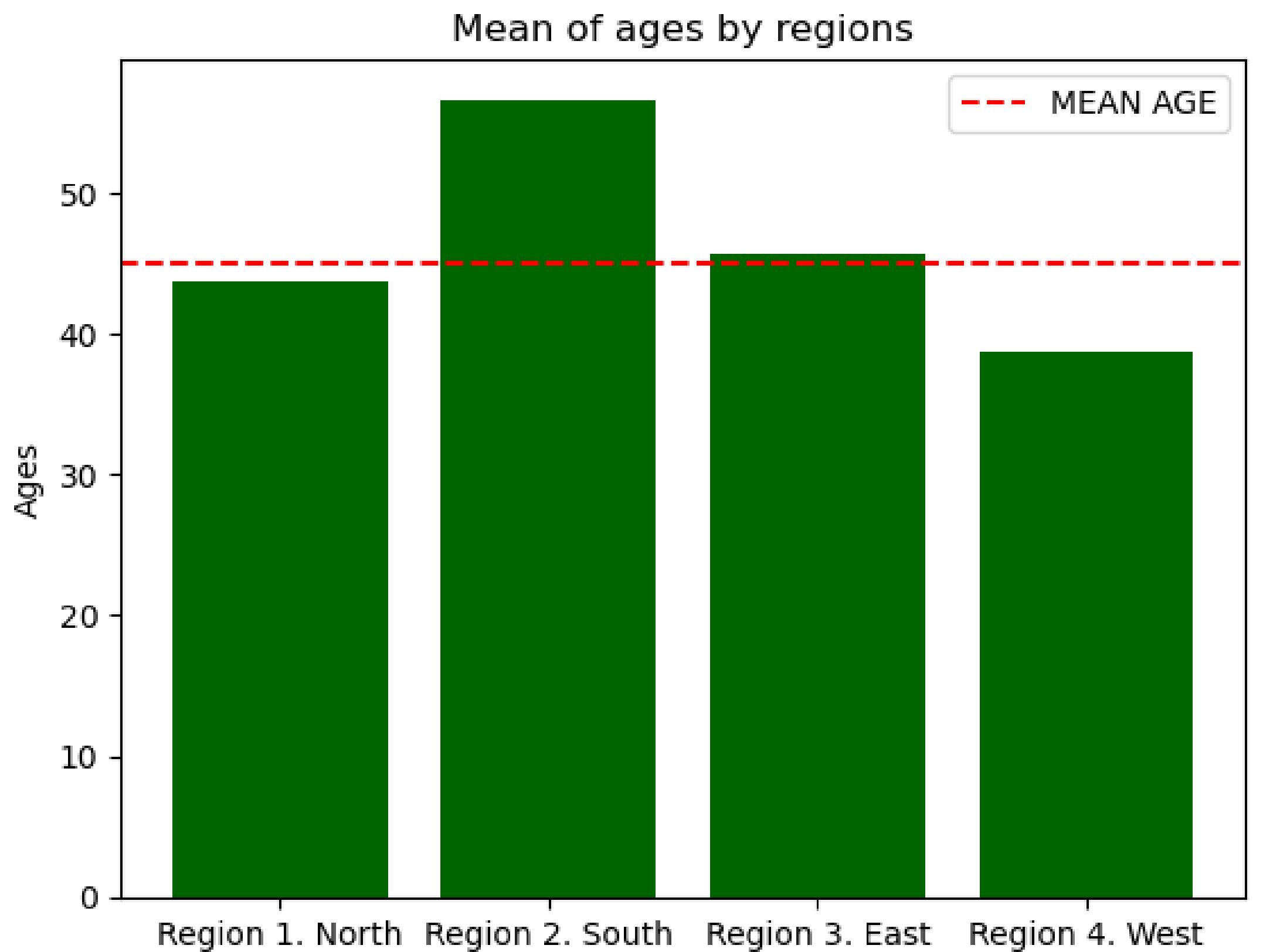
- Are there differences in the age of customers between regions? If so, can we predict the age of a customer in a region based on other demographic data?
- Is there any correlation between age of a customer and if the transaction was made online or in the store? Do any other factors predict if a customer will buy online or in our stores?



# Age of our customers

The average age of our customer is **45 years old.**

We can notice our **customers in region south are older than the rest of customers** from other regions. The average age in this region is 56.



AVERAGE AGE: 46,5

AVERAGE AMOUNT: 717\$

BUYING PATTERN: ON-SITE

**REGION 1  
NORTH**

AVERAGE AGE: 56,5

AVERAGE AMOUNT: 252\$

BUYING PATTERN: ONLINE

**REGION 2  
SOUTH**

**REGION 3  
EAST**

**REGION 4  
WEST**

AVERAGE AGE: 46

AVERAGE AMOUNT: 925\$

AVERAGE AMOUNT ON-SITE: 521\$

AVERAGE AMOUNT ONLINE: 1542\$

BUYING PATTERN: MORE ON-SITE THAN ONLINE

AVERAGE AGE: 40,5

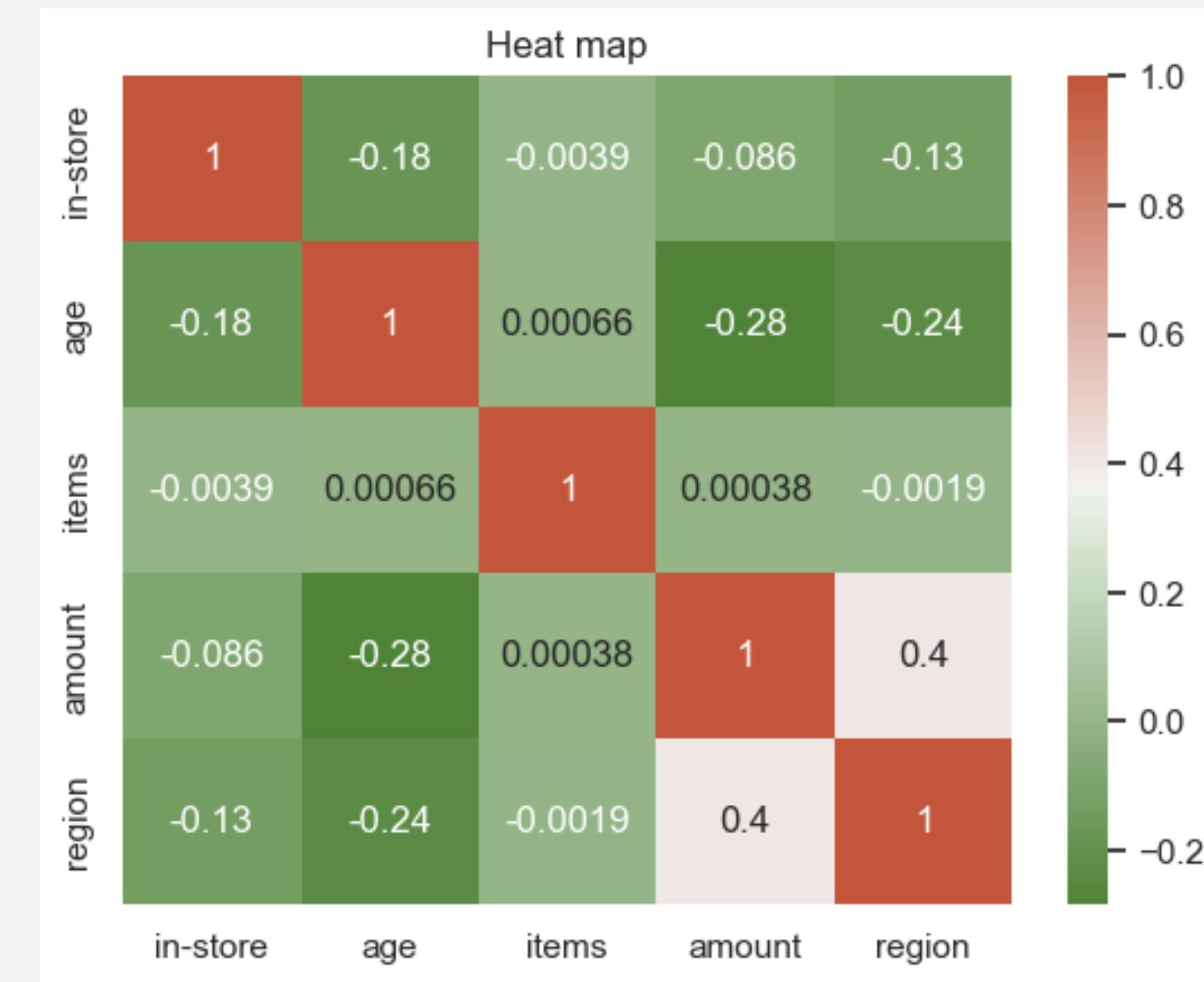
AVERAGE AMOUNT: 1313 \$

AVERAGE AMOUNT ON-SITE: 1024\$

AVERAGE AMOUNT ONLINE: 1544\$

BUYING PATTERN: ON-SITE & ONLINE

# Correlations



Age

In-store

Amount

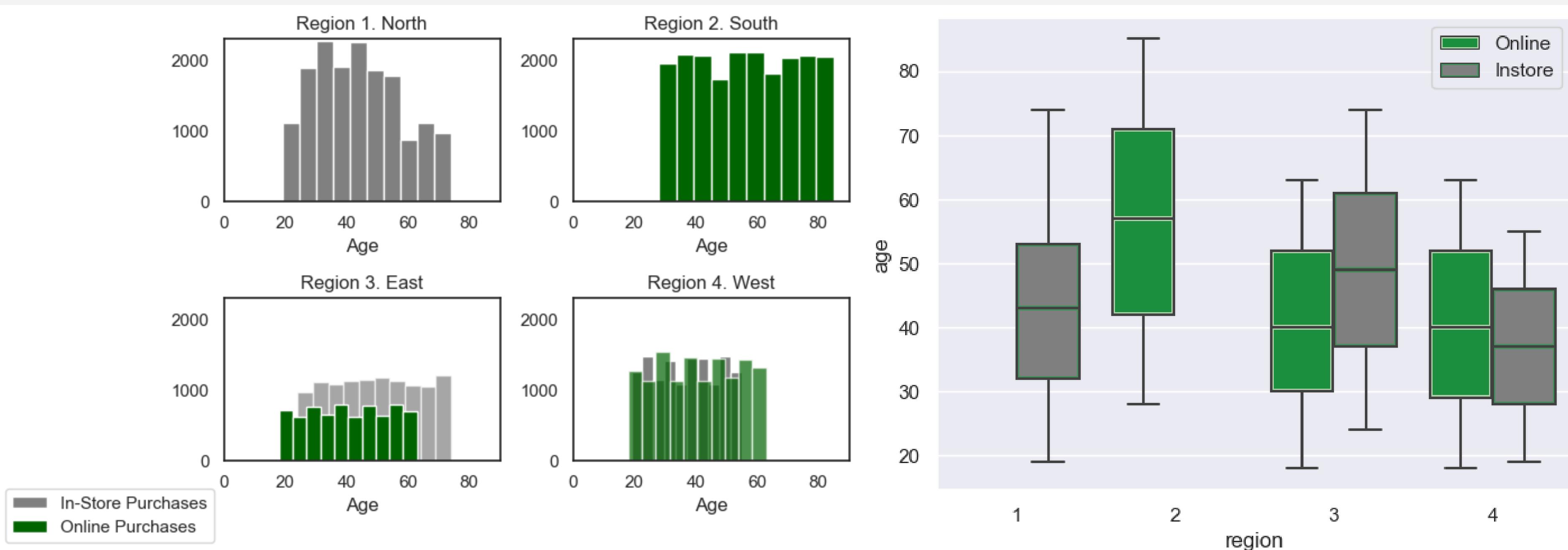
Items

Region

AMOUNT, AGE & REGION HAVE AN IMPORTANT CORRELATION BETWEEN THEM

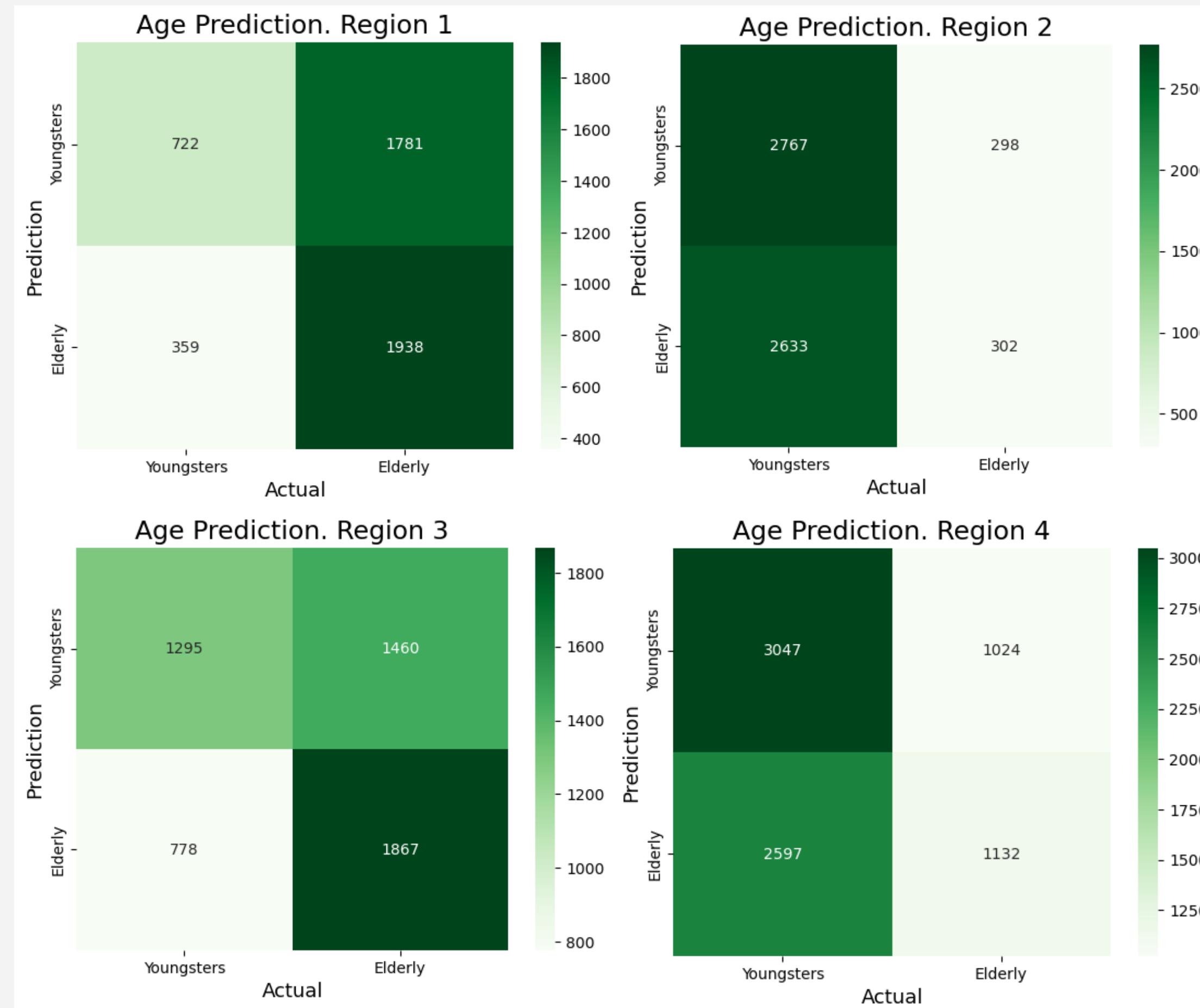
# Are there differences in the age of customers between regions?

As we can see on the charts below in general **we don't have many differences in the age of customers** between regions except from region 2 (south). **In Region South people is older than in the rest of regions.**



# Can we predict the age of a customer in a region based on other demographic data?

**Region 1 (North)**  
**Accuracy : 0.55**  
**Precision : 0.66**



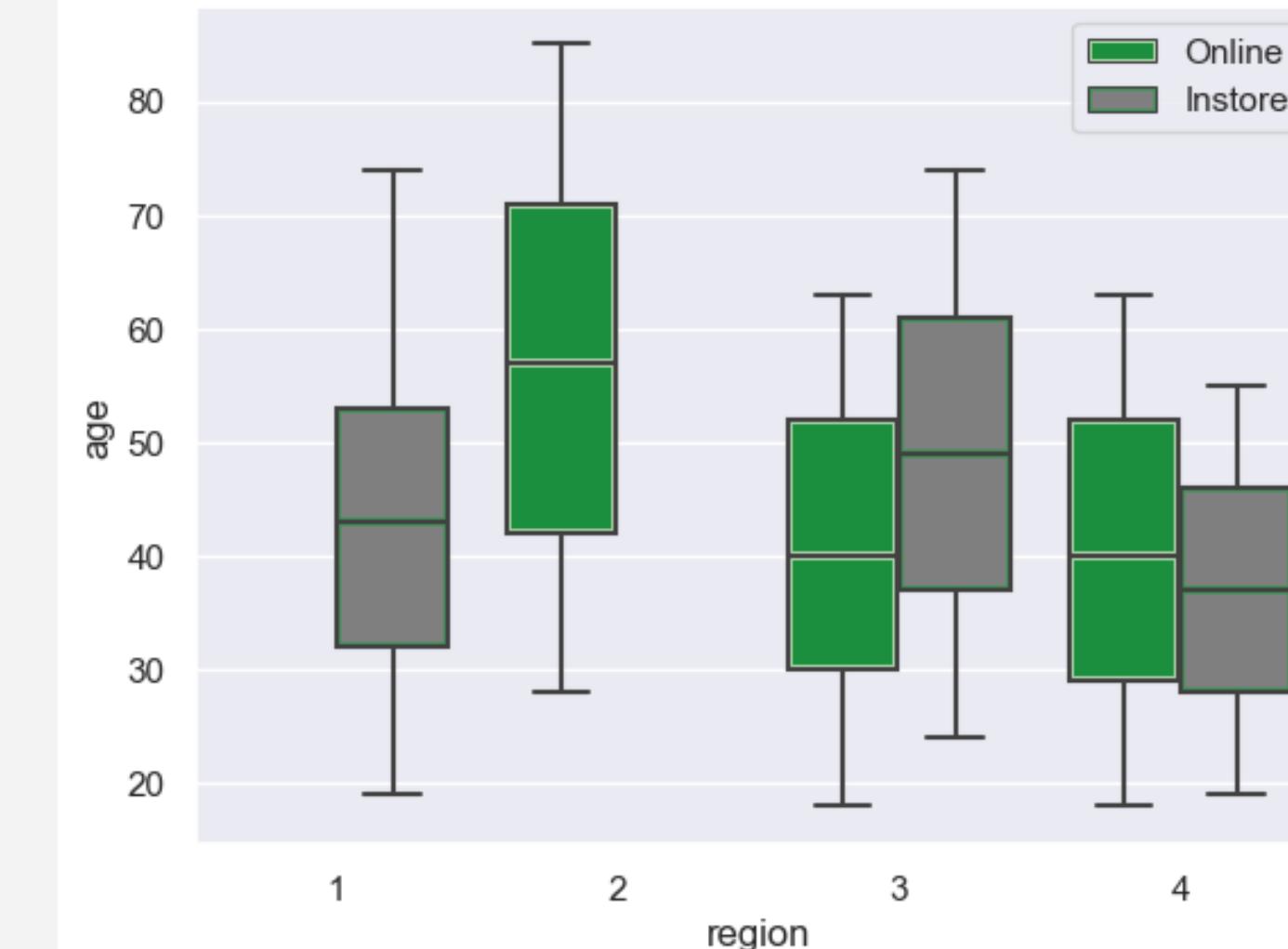
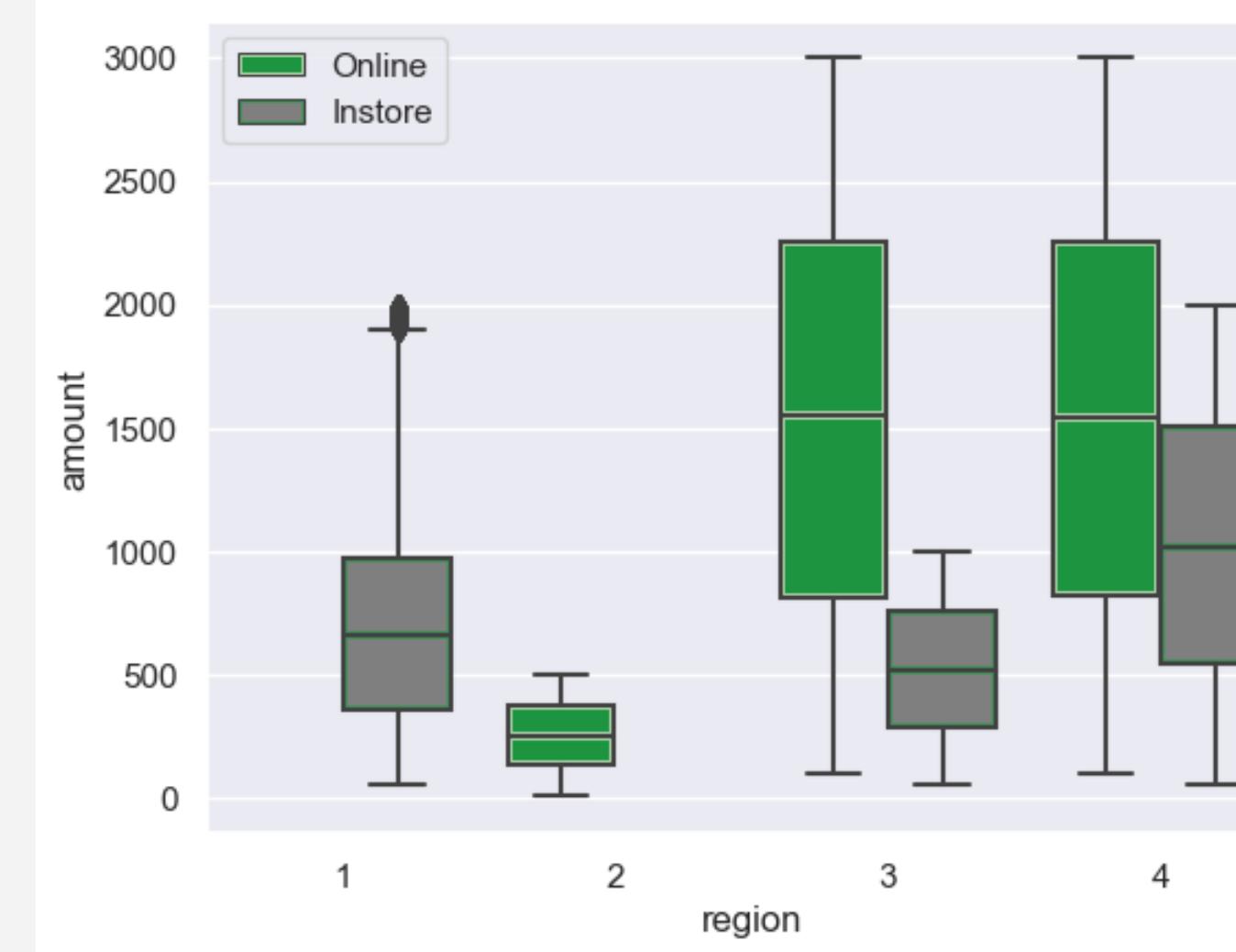
**Region 3 (East)**  
**Accuracy : 0.58**  
**Precision : 0.62**

**Region 2 (South)**  
**Accuracy : 0.51**  
**Precision : 0.51**

**Region 4 (West)**  
**Accuracy : 0.53**  
**Precision : 0.54**

# Online and on-site transactions

- Region and amount can be determining variables to know where a transaction has been made in the following cases:
  - If region is NORTH we know the purchase is ON-SITE
  - If region is SOUTH we know the purchase is ONLINE.
  - If amount is higher than 2000\$ we know the purchase is ONLINE.



# Conclusions



## Online versus On-site

Customers spend a higher amount when buying online. However we do not sell online in all our regions.

## Conditioning restrictions

The maximum amount limit restrictions condition the results.

Region north only sells on-site and region south only sells online.

## Region south - Special characteristics

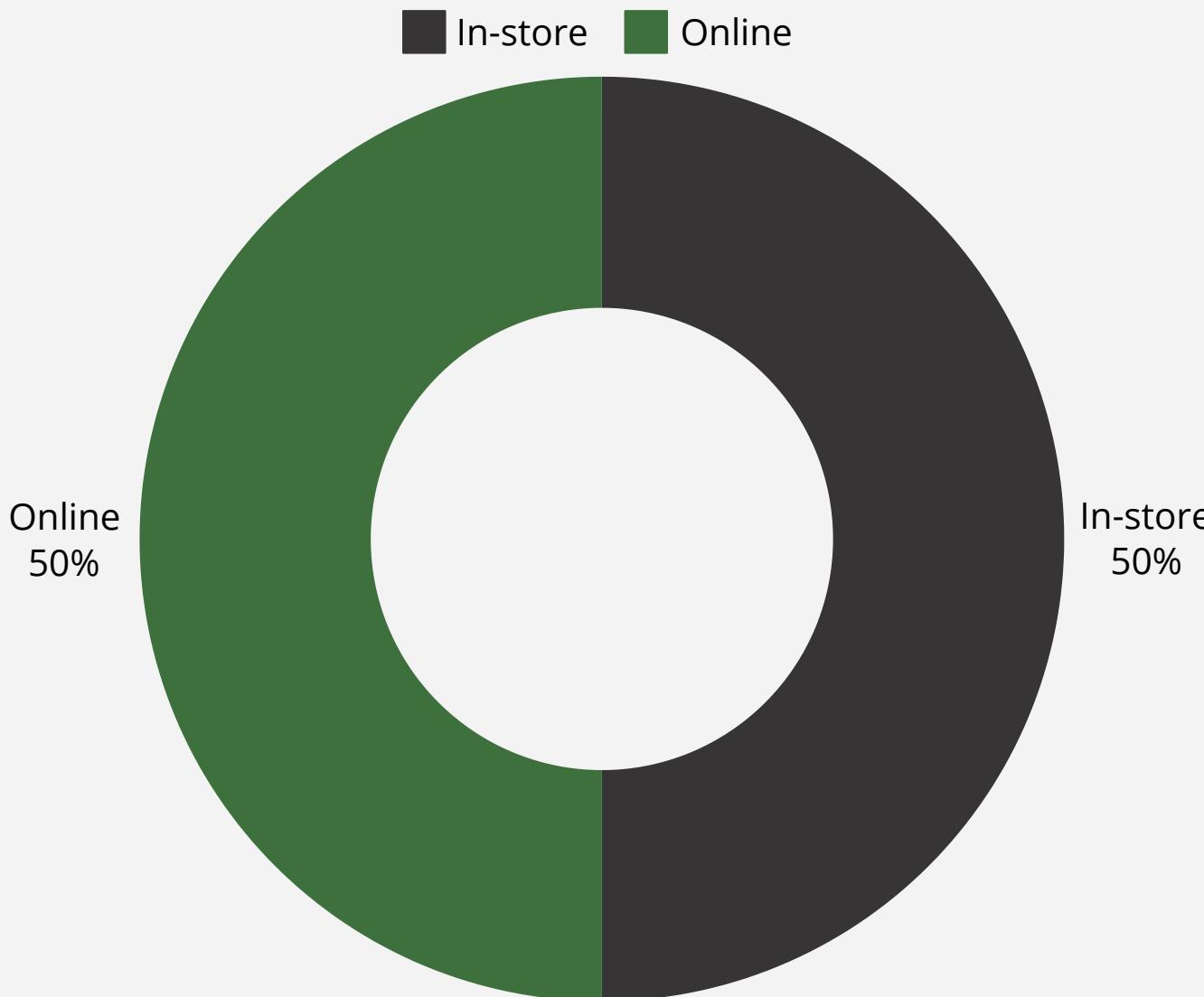
This area has specific characteristics, as it only sells online, it has a maximum limit of 500\$ and the customers are older.

## Hard to make predictions

With the data and the variables we have is hard to make accurate predictions about our customers' profiles.

# \*Notes

We have selected the 50% of our data from online customers and the other 50% from on-site customers. That means that we can use this information to analyze patterns for these two types of customers, but we cannot analyze our incomes using this data as it doesn't represent a real sample of our 'online' and 'on-site' customers.





A top-down photograph of a person working at a light-colored wooden desk. The person is wearing a brown long-sleeved shirt and is using a silver laptop. Their hands are visible on the keyboard and trackpad. To the left of the laptop is a white spiral-bound notebook and a smartphone. To the right is a white mug containing dark liquid, possibly coffee. In the background, there's a black mesh screen and a black keyboard or mouse pad. The overall lighting is warm and focused on the workspace.

# Thanks for your attention

---

XAVIER PARRA  
BLACKWELL ELECTRONICS