





AGENDA

01. | The Price-Quality Ratio Dilemma

Wine can be overwhelming, but why?

02. | Dataset & Methods

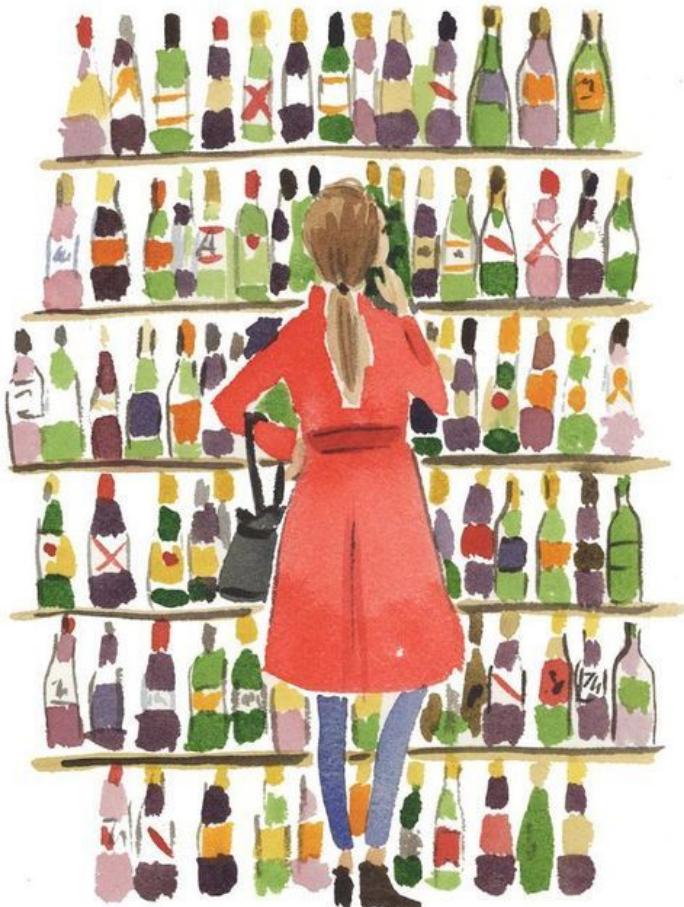
Data manipulation, feature engineering and analysis

03. | Results

It's a complicated relationship between wine and quality

04. | Conclusions and Future Work

Let's take it sip by sip



How many of you have had the dreadful experience of going wine shopping and feeling overwhelmed by the amount of wine bottles, prices and labels?

...wondering if there is really a difference between cheap wine and expensive wine?

**The media is filled with a myriad of information about the
PQR (price:quality ratio)**

From everyday articles that vulgarise the debate,



How to get the best quality wine at any price point

The Truth About Cheap vs. Expensive Wine

The Right Price for Wine? It's Personal



to online wine bottle price calculators,

AUSTRALIAN WINE PRICE CALCULATOR 2015

Quality Score (out of 100) Variety/Style

Region Vintage

Cellar (drink to year) Specify Retail Price (optional) \$

Model Price Predictions

Predicted Average Price \$

Over (+) or Under (-) Priced \$

Enter your unit sizes and prices here:

1 Wine LUC per bottle

(Landed Unit Cost - this should be inclusive of wine equalisation tax but exclusive of GST)

\$ **15.62**

2 Bottle Selling Price (inc GST)

The full price as it appears on the menu

\$ **65**

3 Bottle Size (mls)

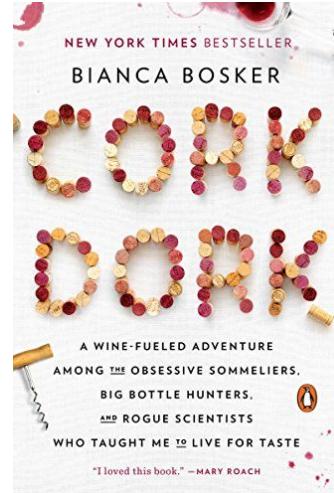
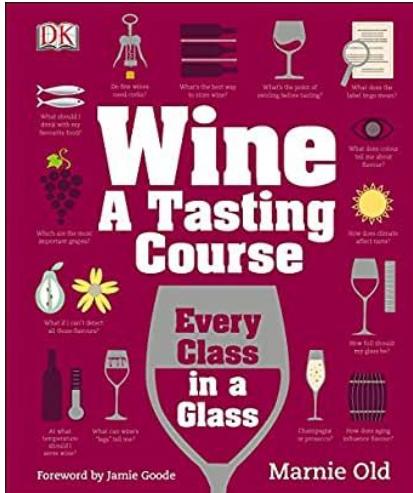
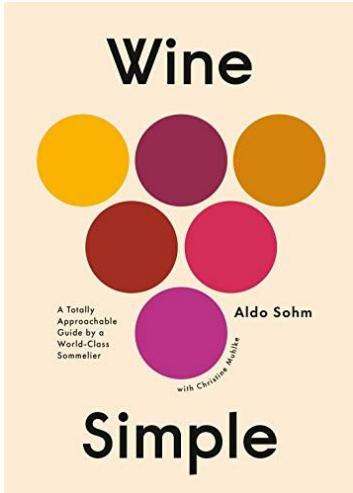
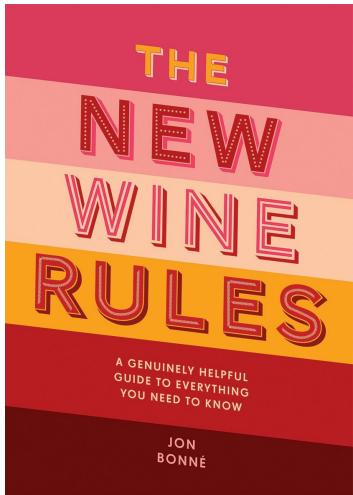
750ml (Table Wine)

4 Glass Pour Size (mls)

120

ml

to books,



to apps,



WE AR



CorkageFee



Hello Vino



Drizly



My Wine
Society



Wine Picker



Wine-
Searcher



Delectable



Winery
Passport



Wine Events



Wine Ring

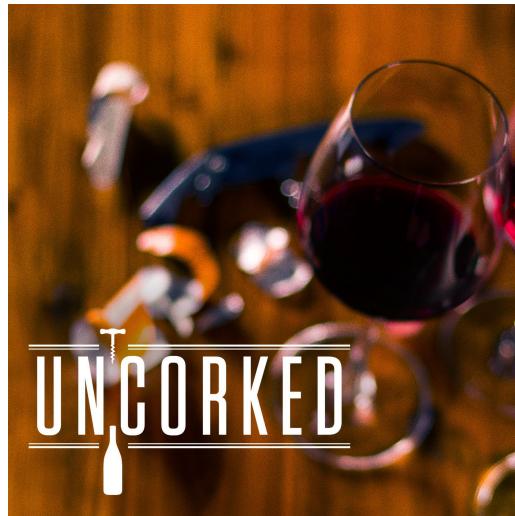


Vivino



Tipple

to movies, TV shows, informational videos and more



**But while trying to educate the reader,
they can actually end up confusing us more**



PROJECT GOALS



Analyze

the price:quality
relationship of wine



Get

insights as revealed
by results



Debunk

common myths around price and
quality based on analysis of data and
previous research literature



THE DATASET

DATASET CHARACTERISTICS

+80,000

Wine
reviews

+40
countries

\$

Pricetag

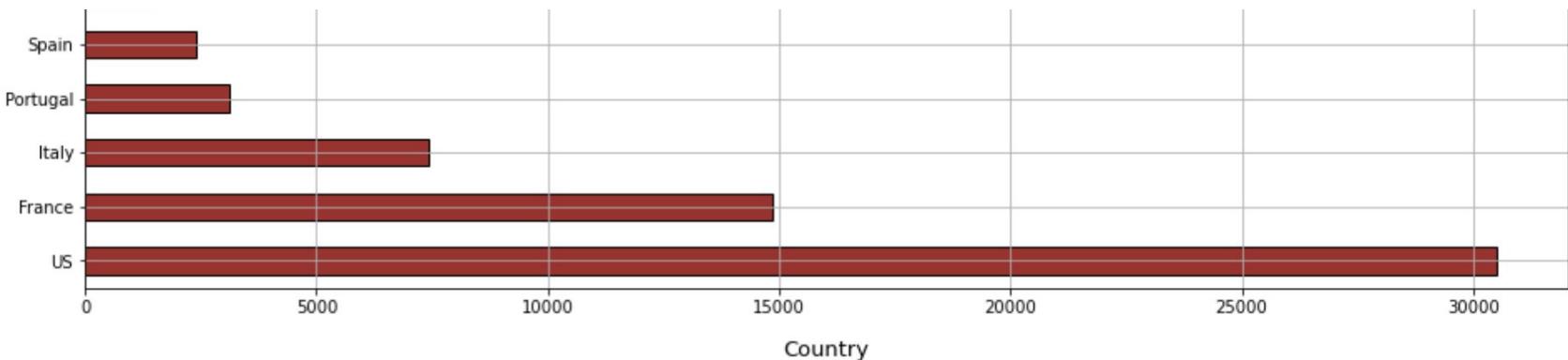
Sommelier
information

Grape
Variety

Score
from
0-100



DATASET CHARACTERISTICS



DATASET CHARACTERISTICS

+70,000

Prices in the dataset

\$39

Average price per bottle

\$3,400

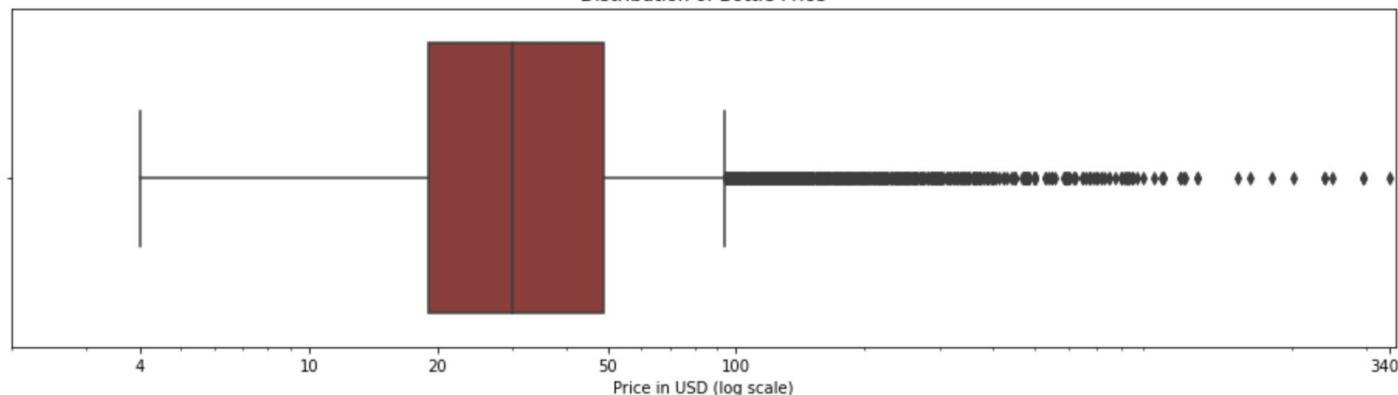
Maximum price

\$4

Minimum price



Distribution of Bottle Price



DATASET CHARACTERISTICS



+10,000

Grape varieties in the world

~700

Grape varieties in the dataset

50

For the purpose of my analysis I focused on the 50 most mentioned

DATASET CHARACTERISTICS

LANGUEDOC-ROUSSILLON



Carignan
Espagne, Inde, États-Unis, Chili



Grenache
Espagne, Inde, Tunisie, États-Unis, Australie, Algérie, Tunisie, Maroc



Alicante Bouschet
Inde, Espagne, Grèce, Portugal, États-Unis, Argentine



Mourvèdre
Espagne, Australie, États-Unis



Tremplin
Espagne, Portugal, Argentine



Muscat à petits grains
Inde, Belgique, Grèce, Roumanie, Afrique du Sud



Mauve
Espagne, Algérie, Tunisie, Maroc

SUD-OUEST



Cot
Argentine, Chili, États-Unis



Tannat
Uruguay, Argentine, Bolivie



Colombard
Afrique du Sud, États-Unis, Australie, Mexique



Négrette



Grise Manseng
Chaco, Uruguay



Médoc



Duras

BORDEAUX



Cabernet-Sauvignon
Chili, États-Unis, Australie, Espagne



Merlot
Italie, États-Unis, Bulgarie, Chine, Espagne, Australie, Chili



Sémillon
Australie, Afrique du Sud, Argentine, Chili, Turquie



Macabeu
Afrique du Sud, Hongrie, Roumanie, Ukraine



Petit Verdot
Australie, États-Unis, Chili



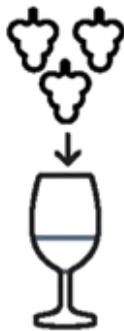
Gamay
Chili, Italie



Ugni Blanc
Italie, Argentine, Uruguay, Israël, Afrique du Sud

COGNAC

DATASET CHARACTERISTICS



A **single-varietal wine** is made with one grape variety (e.g., Pinot



A **wine blend** is made by mixing several wines together (e.g.,

+8,000

reviews



PINOT NOIR

"Pee-no Nwar"

+6,000

reviews



CHARDONNAY

"Shar-dun-nay"

+5,000

reviews



CABERNET
SAUVIGNON

"Cab-er-nay Saw-vin-yawn"

Other dataset characteristics...

DATASET CHARACTERISTICS

Vintage

Name

Winery

Region
Province

Designation



DATASET CHARACTERISTICS



Vintage



Name



Winery

Vintage refers to the year when the grapes were harvested.

Non-vintage (NV) wines are a blend of several harvests.



Region
Province



Designation



DATASET CHARACTERISTICS

Vintage

Name

Winery

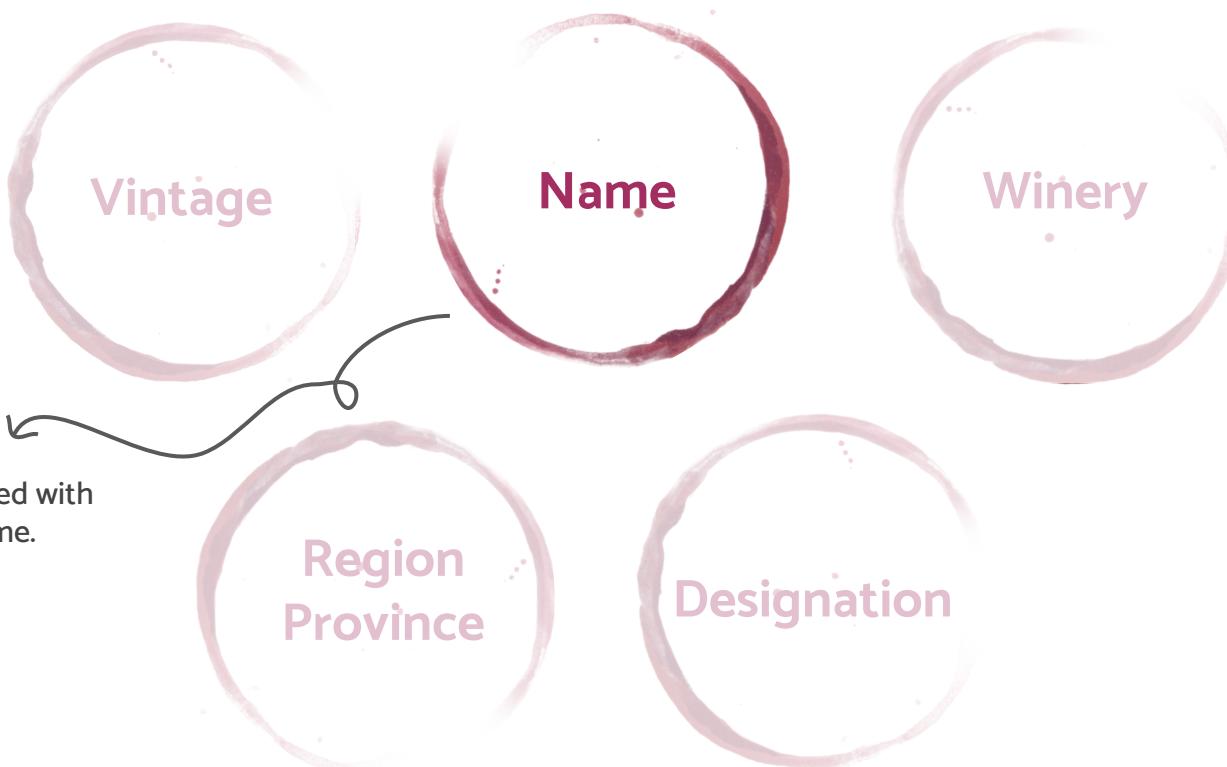
Region
Province

Designation

Wines can be labeled by region. This is common in countries like France e.g. Bordeaux.



DATASET CHARACTERISTICS



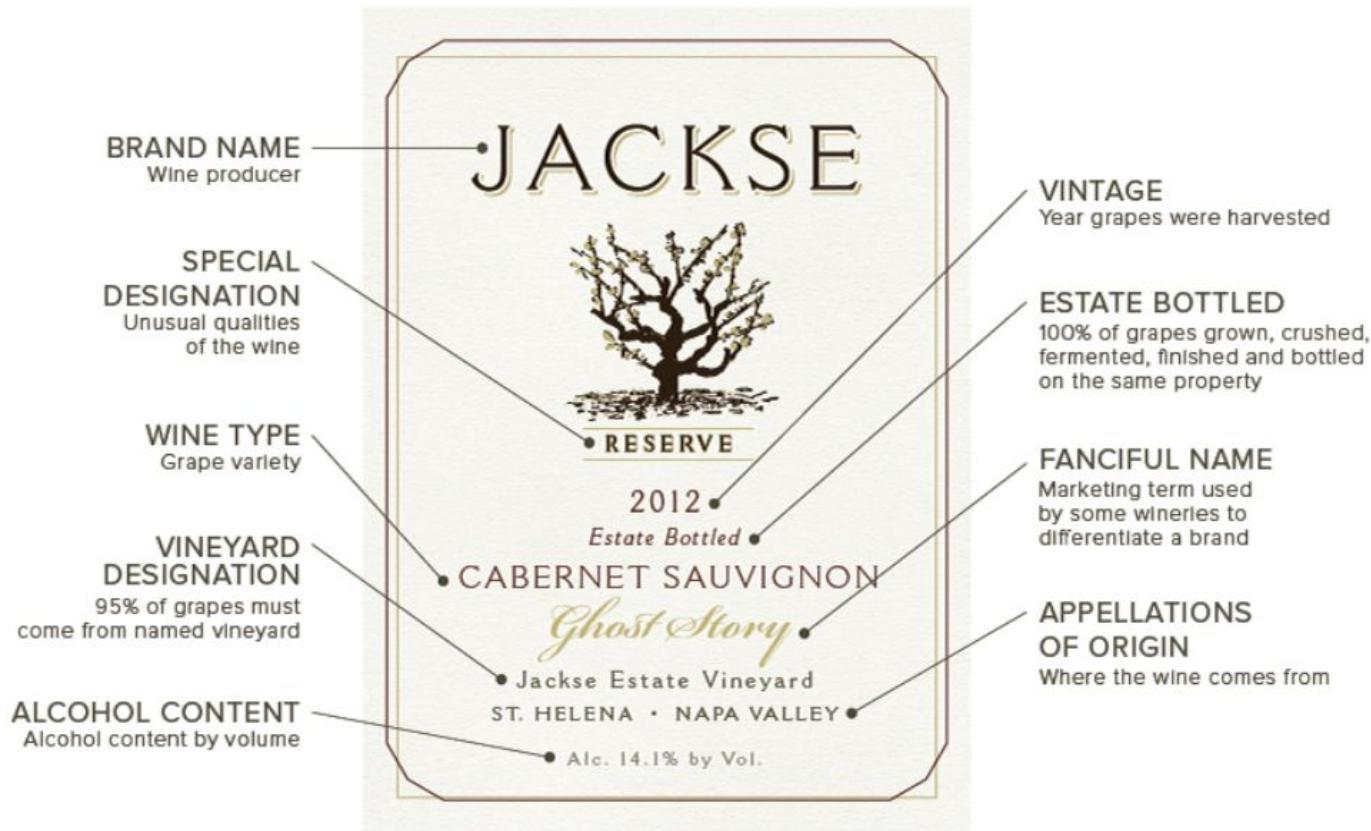
DATASET CHARACTERISTICS



DATASET CHARACTERISTICS



BASICALLY WHAT YOU WOULD SEE ON A LABEL



METHODS

FEATURED ENGINEERING

COLOR
CODED WINE



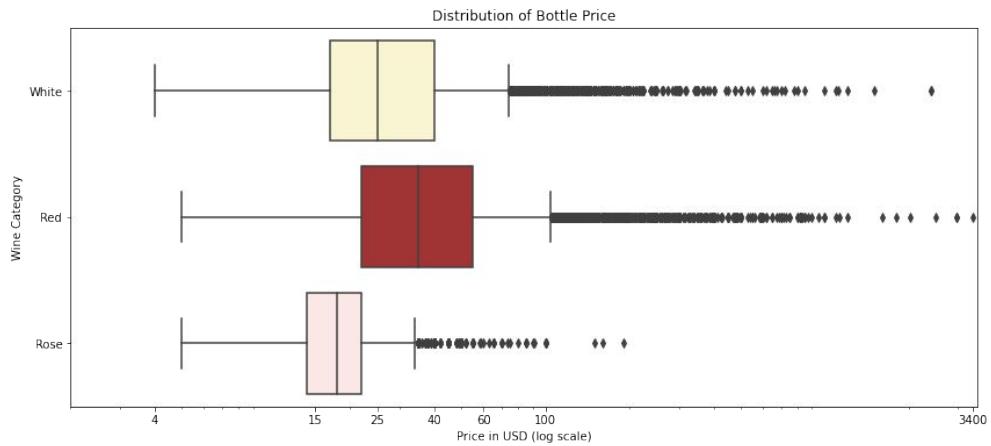
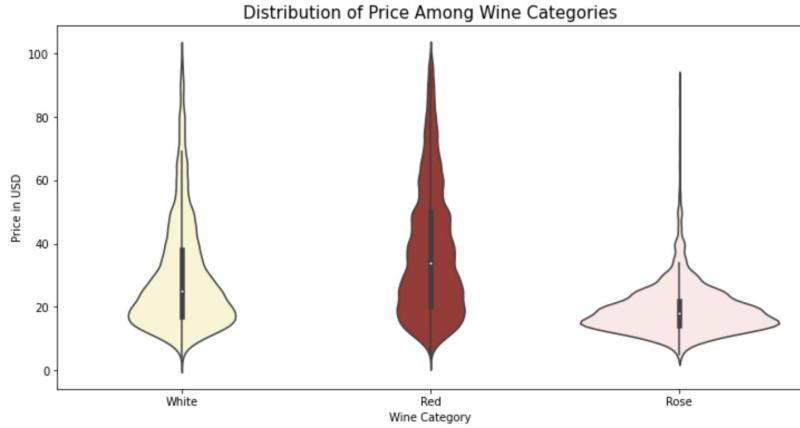
ISO CODED
COUNTRIES



Natural
Language
Processing
Toolkit
(NLTK)



PRICE DISTRIBUTION ANALYSIS



SENTIMENT DISTRIBUTION ANALYSIS



“It’s a beautiful day outside.” COMPOUND



0.0



0.506



0.494

= **0.5994**

“What a sad weather, it’s been raining all day.”



0.34



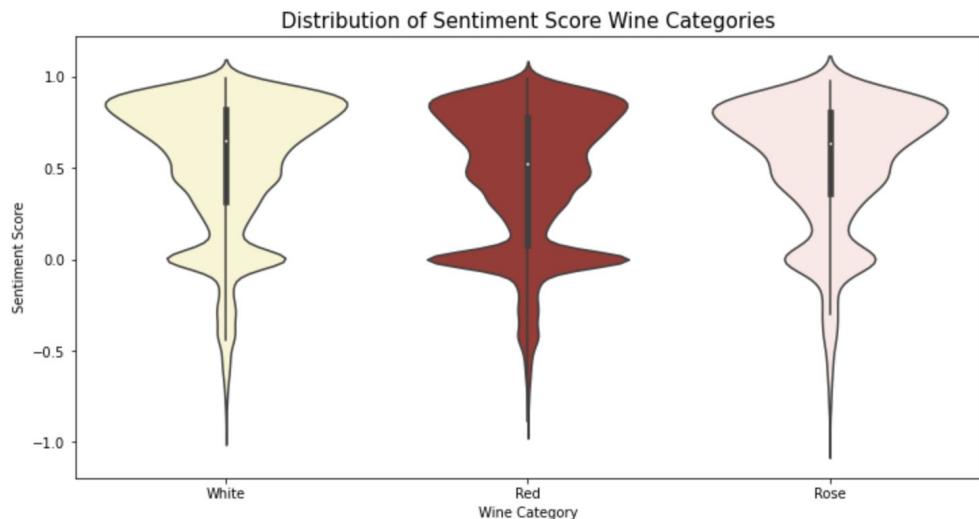
0.66



0.0

= **-0.5574**

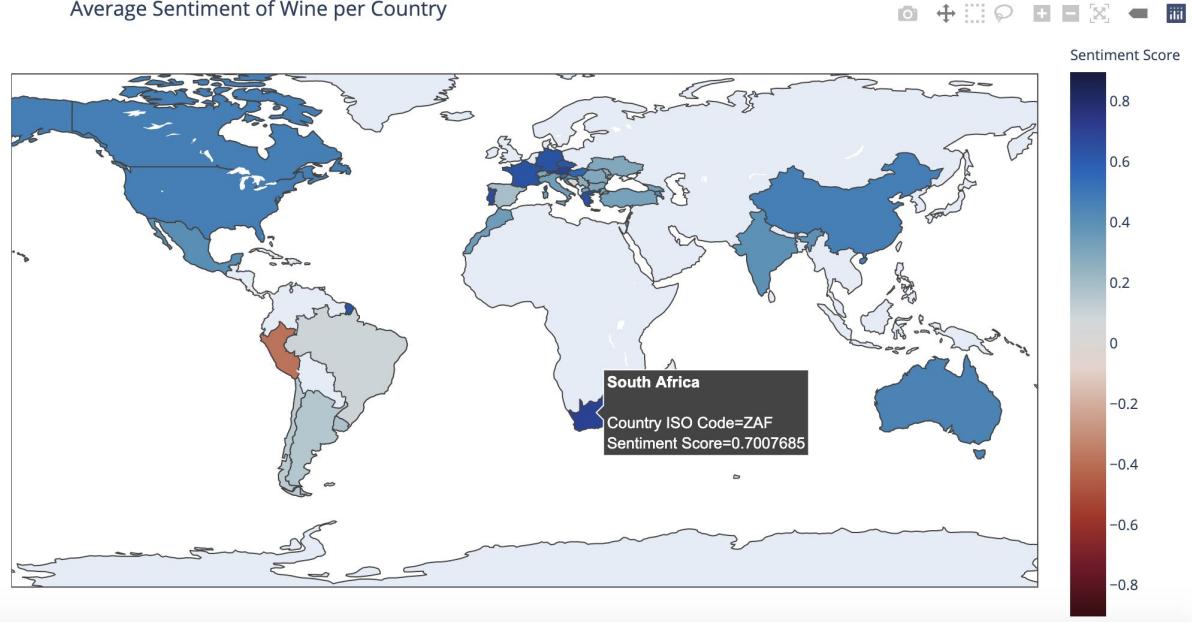
SENTIMENT DISTRIBUTION ANALYSIS



GLOBAL SENTIMENT ANALYSIS

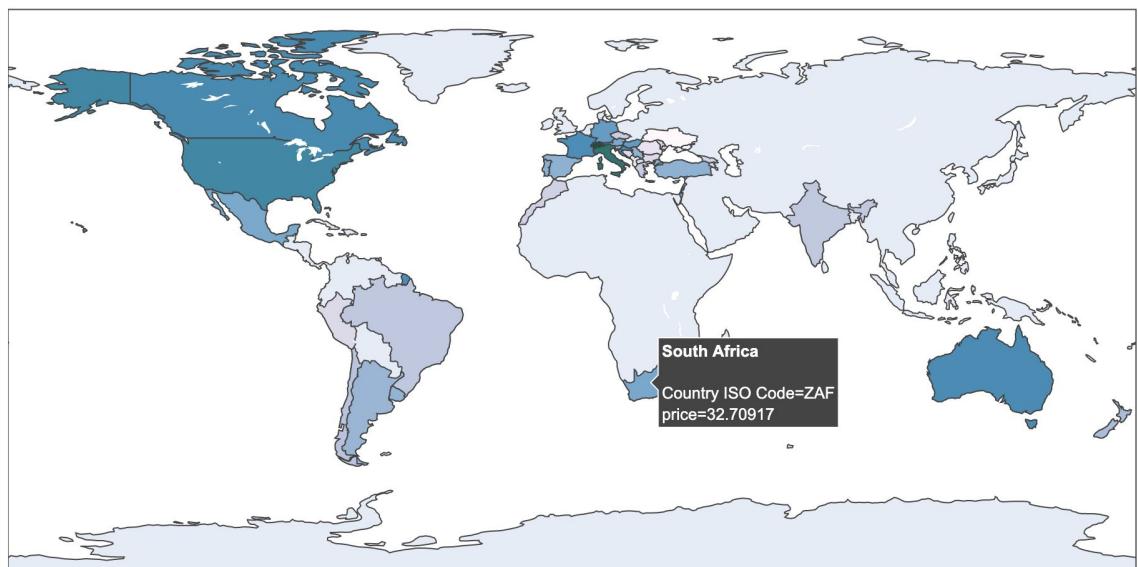


Average Sentiment of Wine per Country

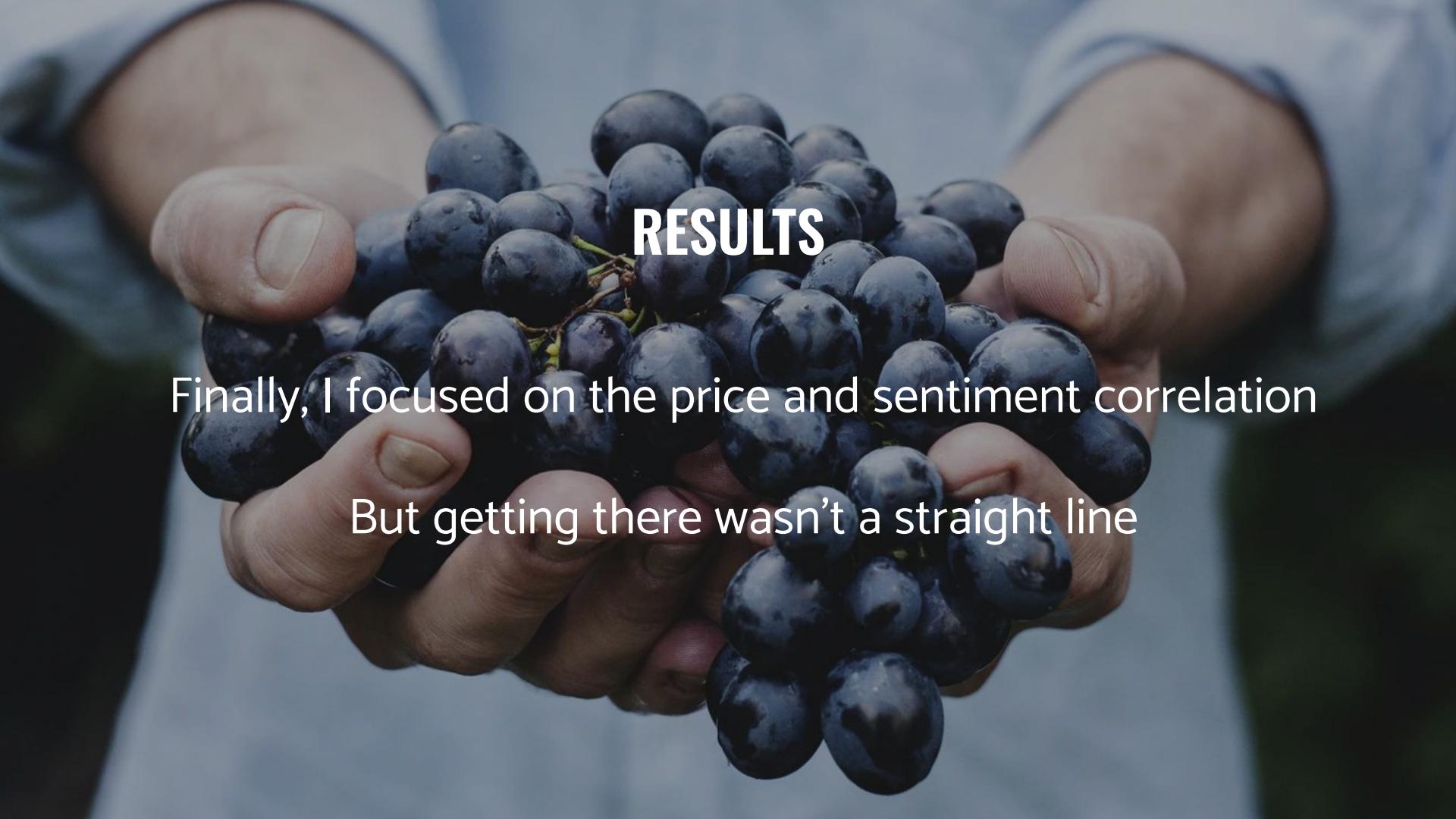


GLOBAL SENTIMENT ANALYSIS

Average Price of Wine per Country



60
50
40
30
20
10

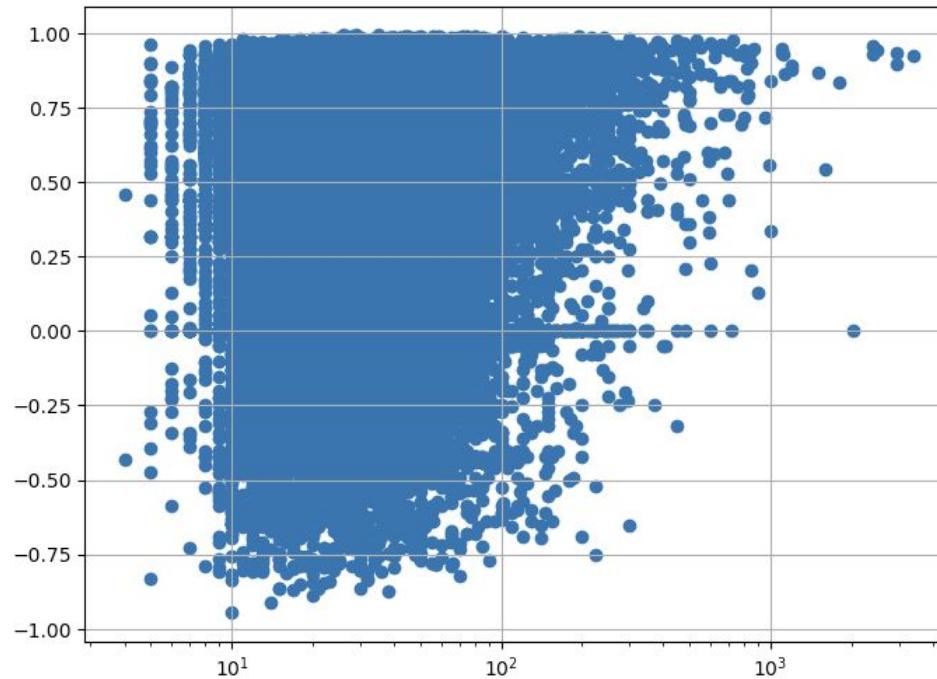
A close-up photograph of a hand holding a bunch of dark, ripe grapes. The grapes are clustered together, and the hand is visible from the fingers to the wrist, set against a soft-focus blue background.

RESULTS

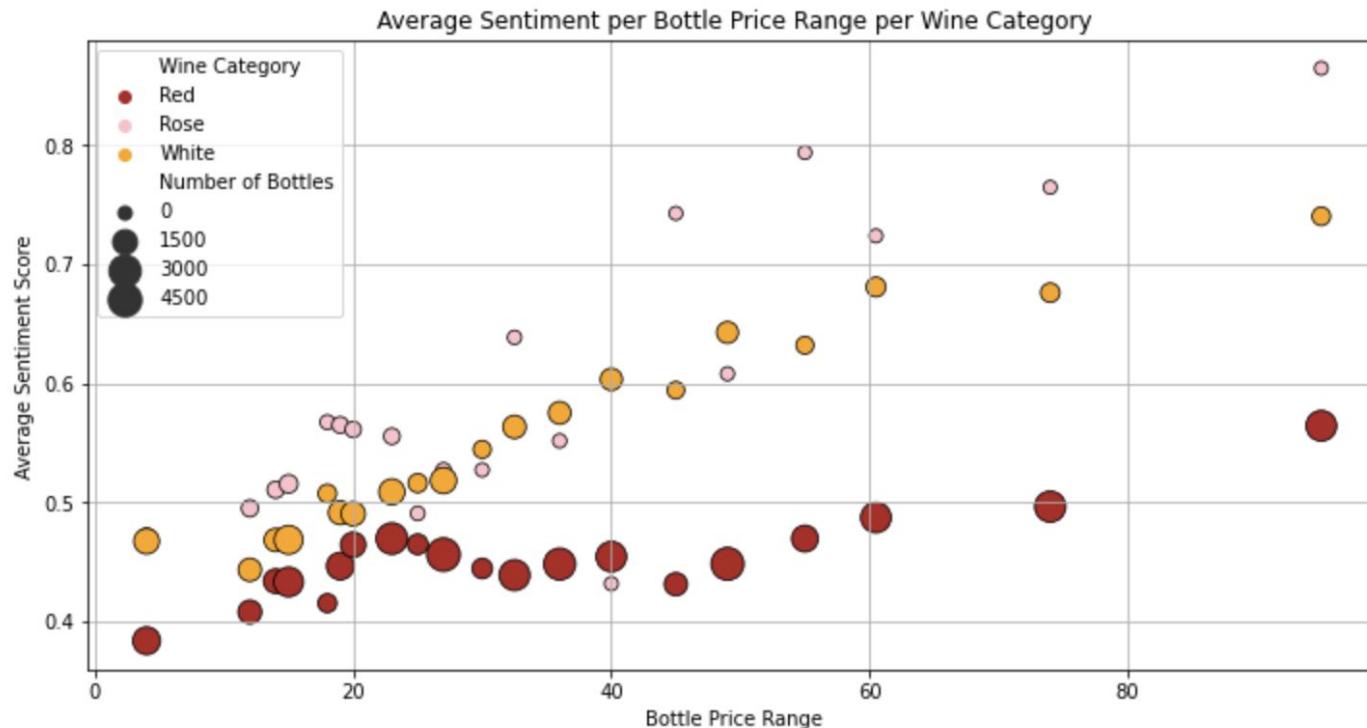
Finally, I focused on the price and sentiment correlation

But getting there wasn't a straight line

But getting there wasn't a straight line

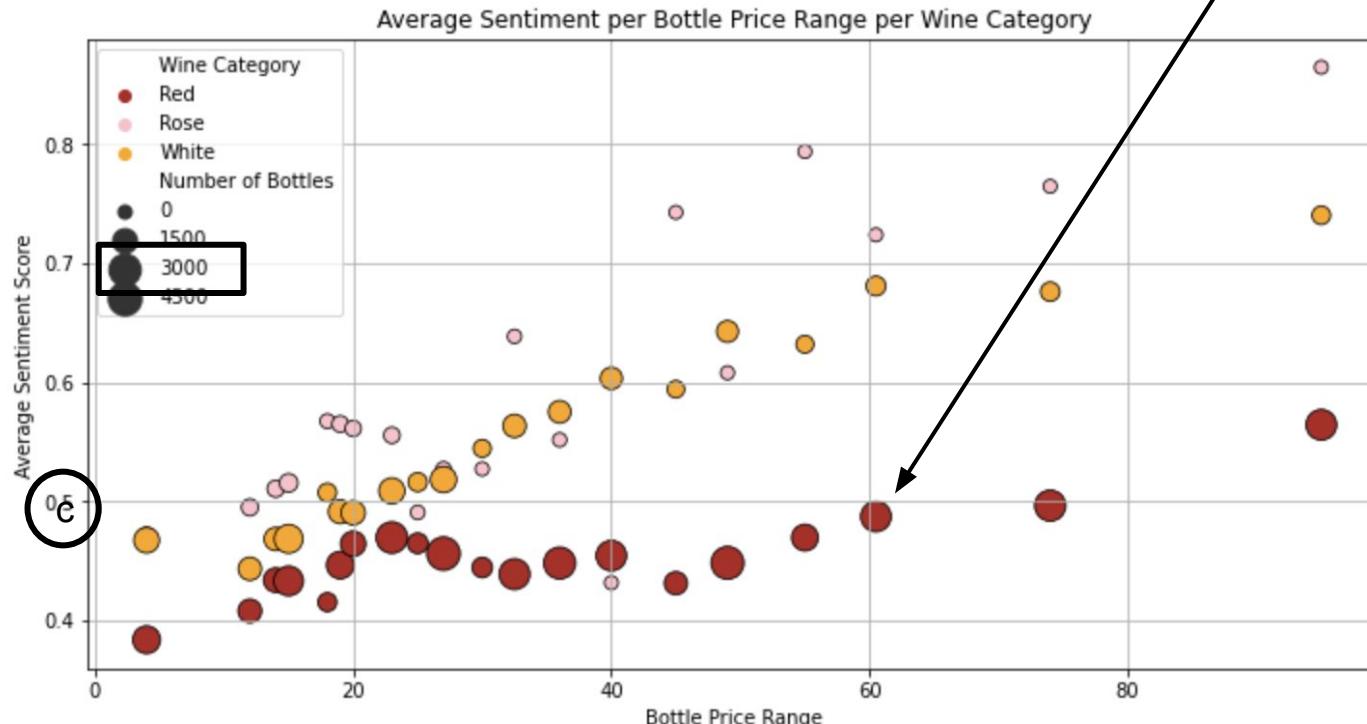


PRICE SENTIMENT ANALYSIS

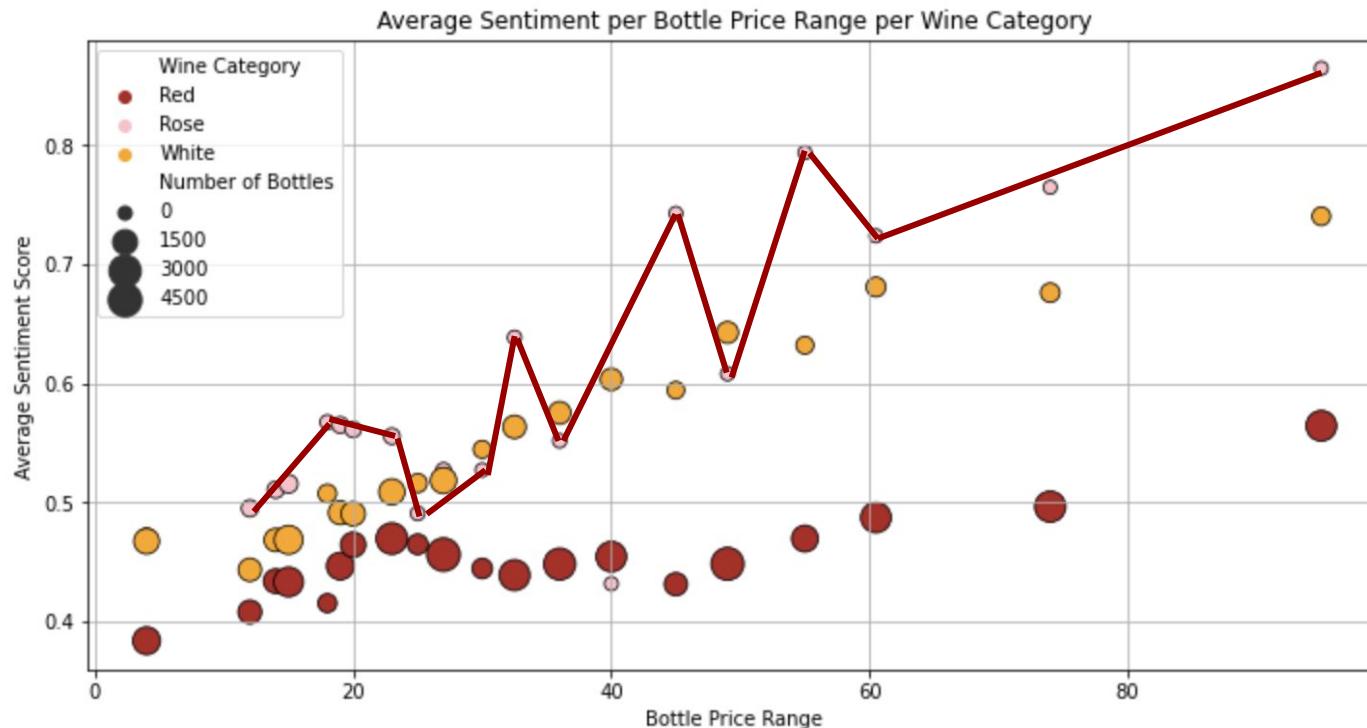


PRICE SENTIMENT ANALYSIS

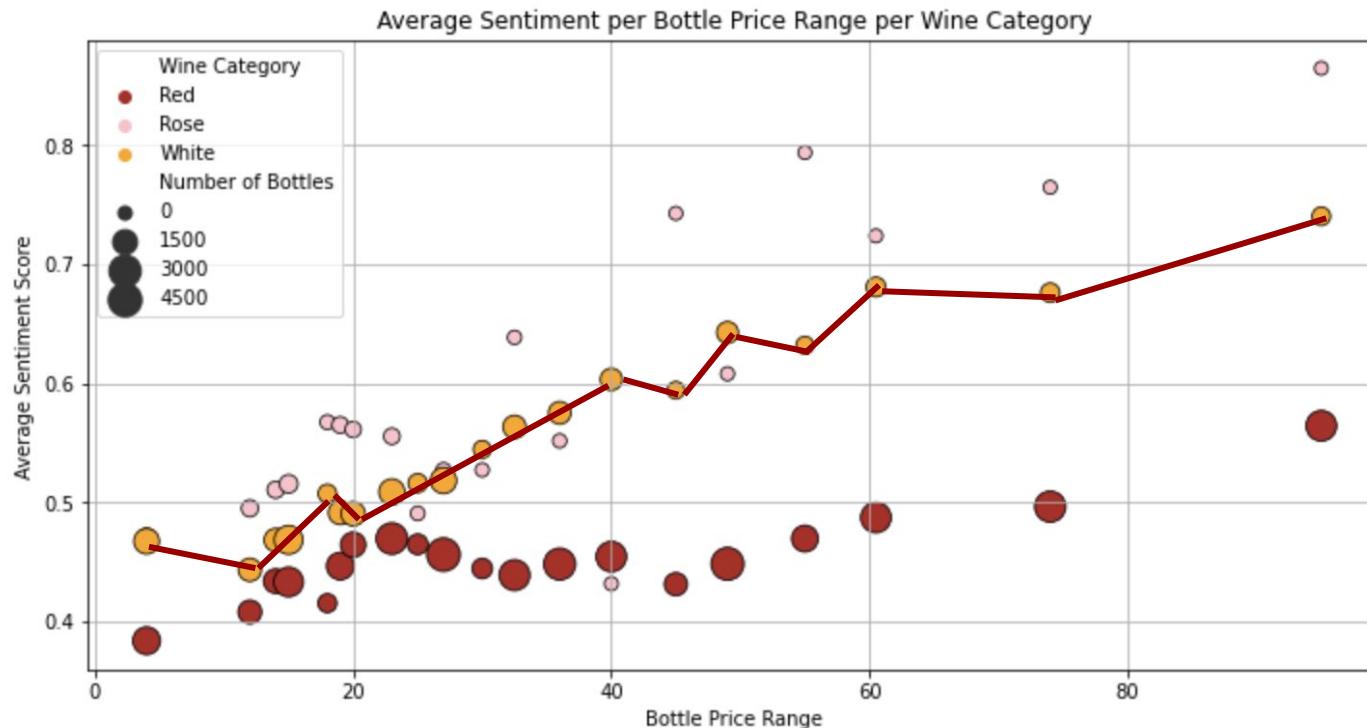
This dot represents an average sentiment score of 0.5 for over 3000 wine bottles priced between \$60 and \$75



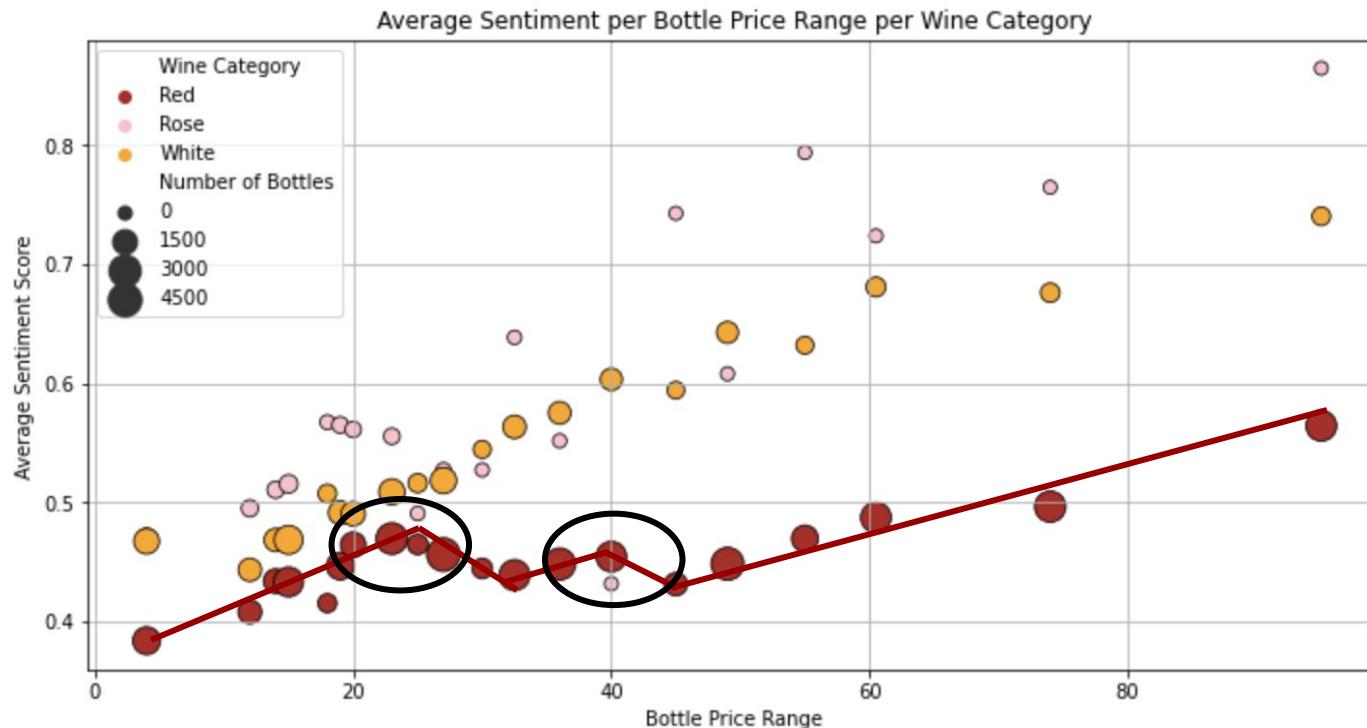
PRICE SENTIMENT ANALYSIS



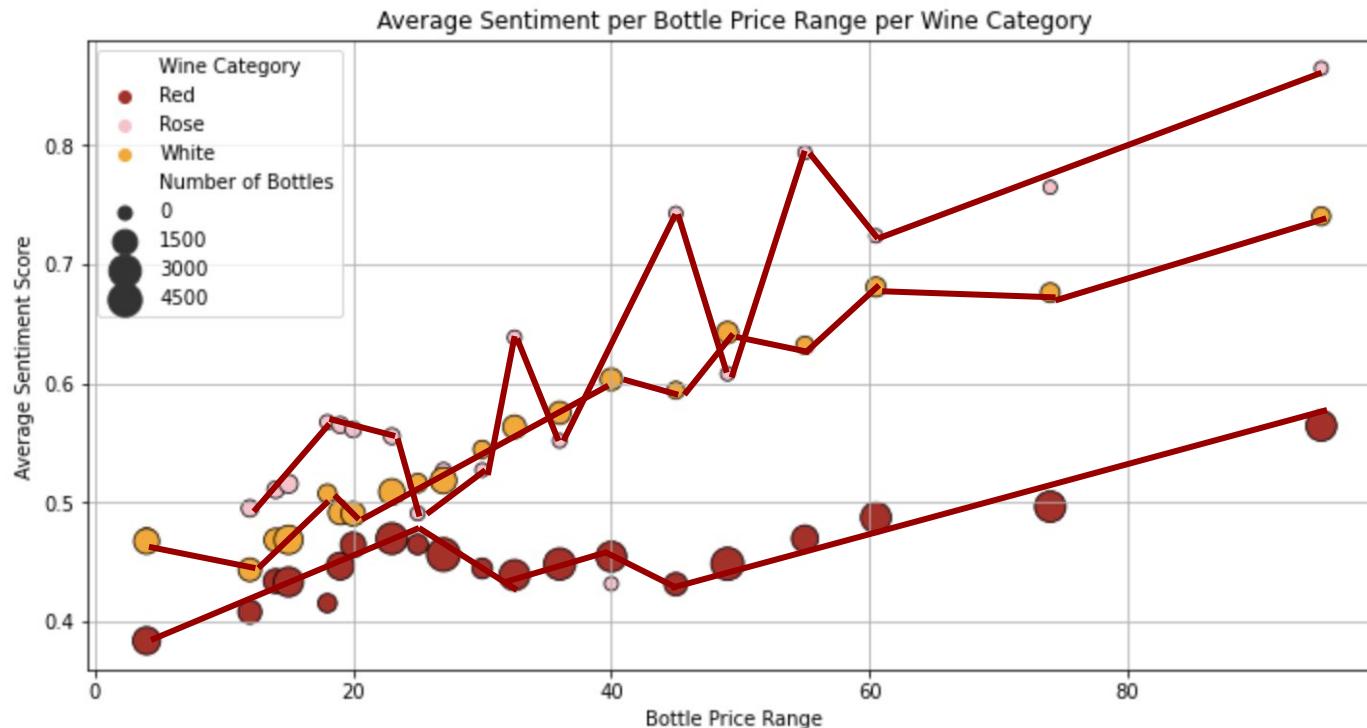
PRICE SENTIMENT ANALYSIS



PRICE SENTIMENT ANALYSIS



PRICE SENTIMENT ANALYSIS





So, what makes a wine expensive?

PRODUCTION COSTS

01

High quality raw materials make more expensive wines

EXTERNAL COSTS

02

These costs do not reflect the quality or savoir-faire put into the production process

PERCEIVED VALUE HEURISTIC

03

Wine is expensive because it can be

PRODUCTION COSTS

01

High quality raw materials
make more expensive wines

EXTERNAL COSTS

02

These costs do not reflect the
quality or savoir-faire put into the
production process

PERCEIVED VALUE HEURISTIC

03

Wine is expensive because it
can be

PRODUCTION COSTS

01

High quality raw materials
make more expensive wines



PRODUCTION COSTS

01

High quality raw materials
make more expensive wines

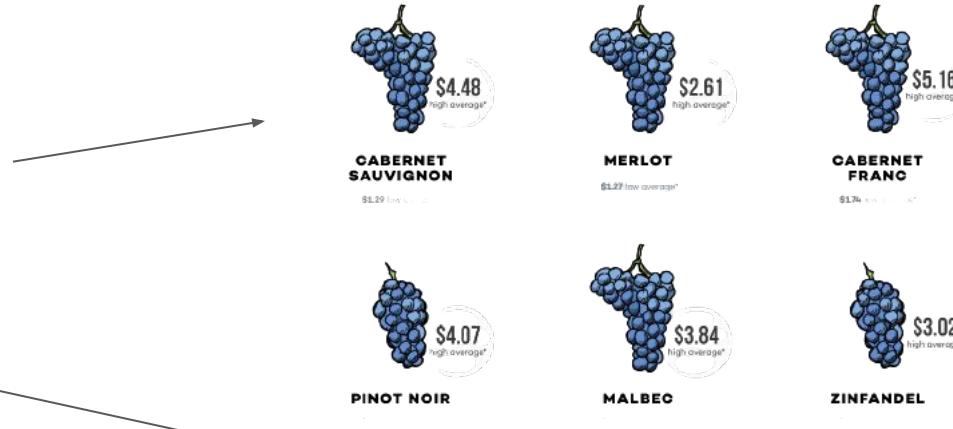


\$600-\$2400 A BARREL

PRODUCTION COSTS

01

High quality raw materials
make more expensive wines



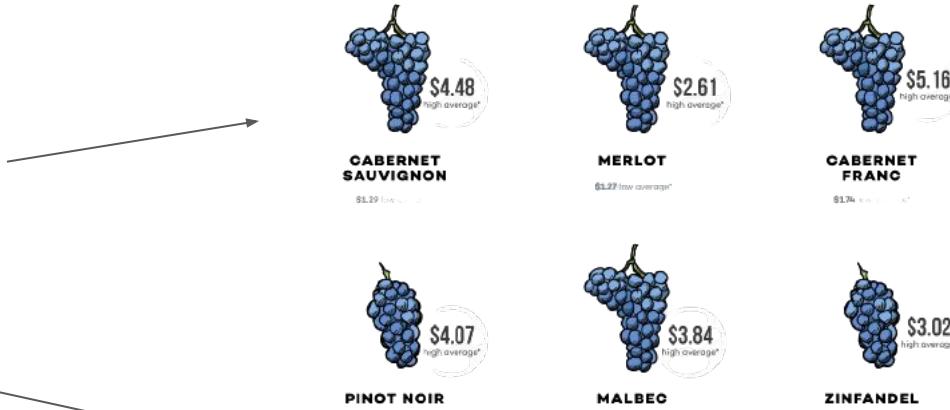
\$2-\$5
per bottle

\$600-\$2400 A BARREL

PRODUCTION COSTS

01

High quality raw materials
make more expensive wines



\$2-\$5
per bottle

\$600-\$2400 A BARREL

PRODUCTION COSTS

01

High quality raw materials make more expensive wines

EXTERNAL COSTS

02

These costs do not reflect the quality or savoir-faire put into the production process

PERCEIVED VALUE HEURISTIC

03

Wine is expensive because it can be

EXTERNAL COSTS



Quantity produced



These costs do not reflect the quality or savoir-faire put into the production process

EXTERNAL COSTS

02

Quantity produced

These costs do not reflect the quality or savoir-faire put into the production process

Winery labor



VS.



EXTERNAL COSTS



Quantity produced

These costs do not reflect the quality or savoir-faire put into the production process

Winery labor

Facilities expenses

EXTERNAL COSTS

02

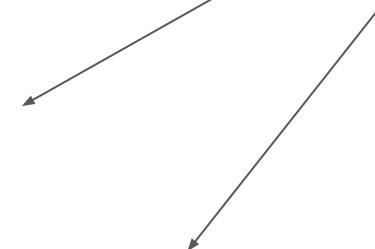
Quantity produced



Winery labor



Facilities expenses



Packaging

These costs do not reflect the quality or savoir-faire put into the production process



EXTERNAL COSTS



Quantity produced

These costs do not reflect the quality or savoir-faire put into the production process

Winery labor

Facilities expenses

Packaging

Administrative

EXTERNAL COSTS



Quantity produced

These costs do not reflect the quality or savoir-faire put into the production process

Winery labor

Facilities expenses

Packaging

Sales expenses

Administrative

EXTERNAL COSTS



Quantity produced

These costs do not reflect the quality or savoir-faire put into the production process

Winery labor

Facilities expenses

Packaging

Administrative

Marketing expenses

Sales expenses

EXTERNAL COSTS

02

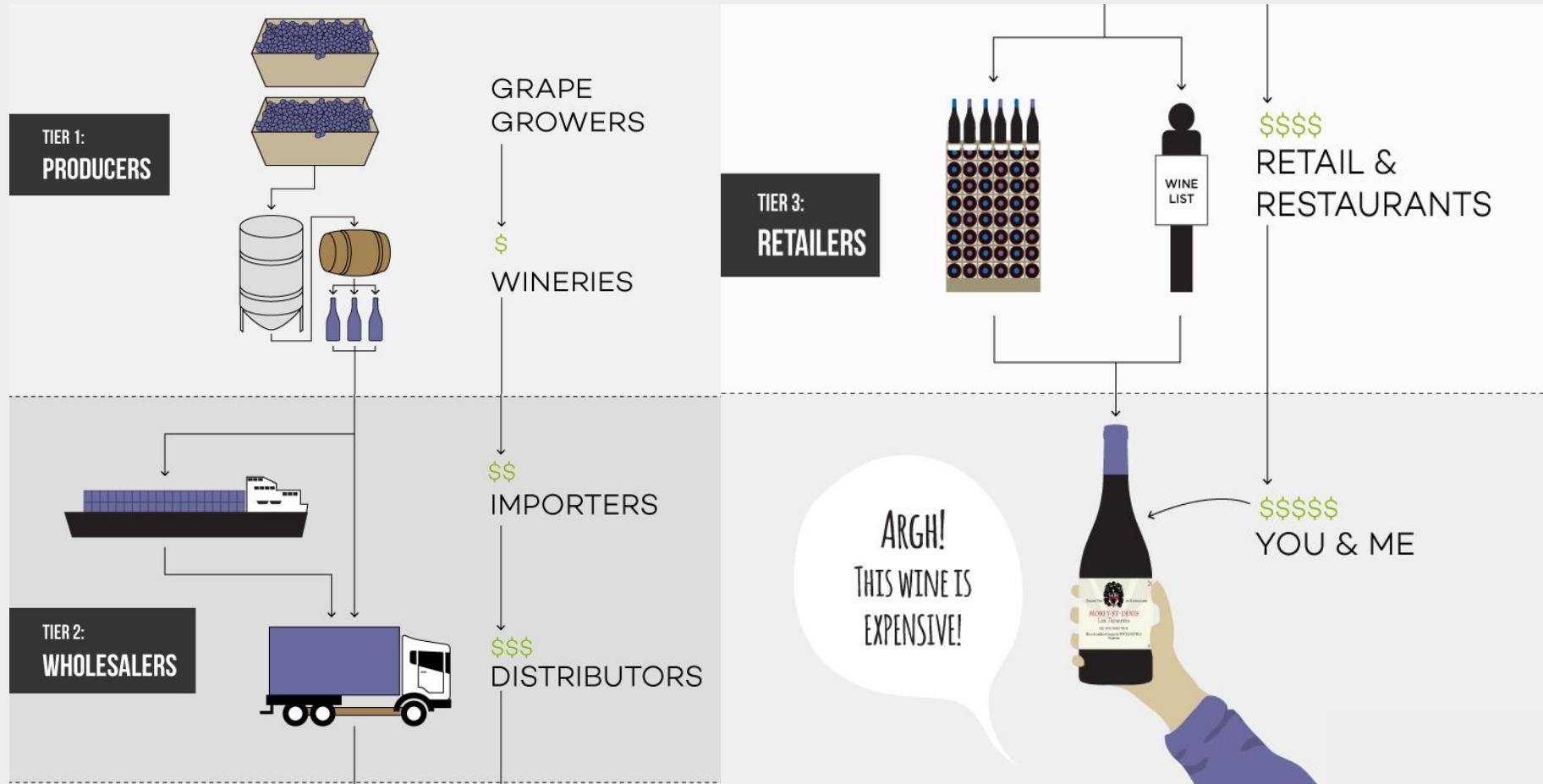


EXTERNAL COSTS

02



THE 3-TIERED SYSTEM



ONLINE WINE MARKETPLACE



PRODUCTION COSTS

01

High quality raw materials make more expensive wines

EXTERNAL COSTS

02

These costs do not reflect the quality or savoir-faire put into the production process

PERCEIVED VALUE HEURISTIC

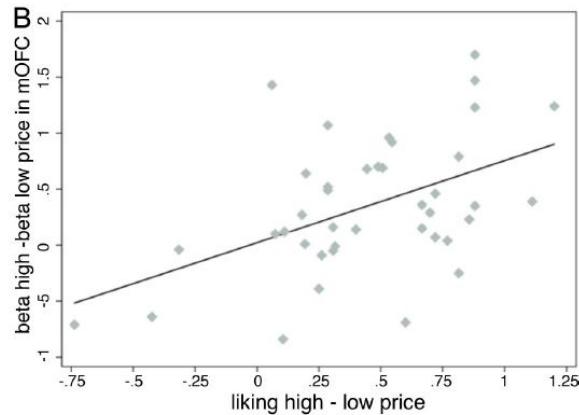
03

Wine is expensive because it can be

A



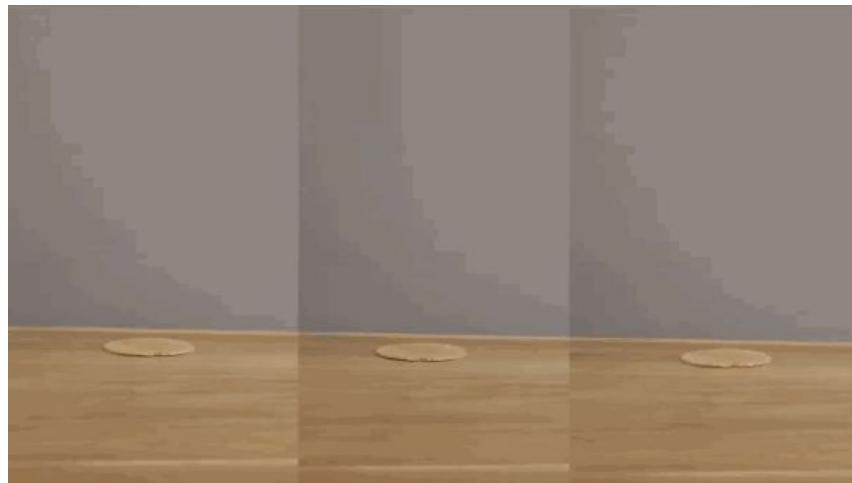
B



PERCEIVED VALUE HEURISTIC



Wine is expensive because it can be



Vox: Expensive Wine is for Suckers

Marketing actions can modulate neural representations of experienced pleasantness, 2008

**It's crucial to understand what comes into pricing a bottle
so one can understand the nature of the relationship between
quality and price.**

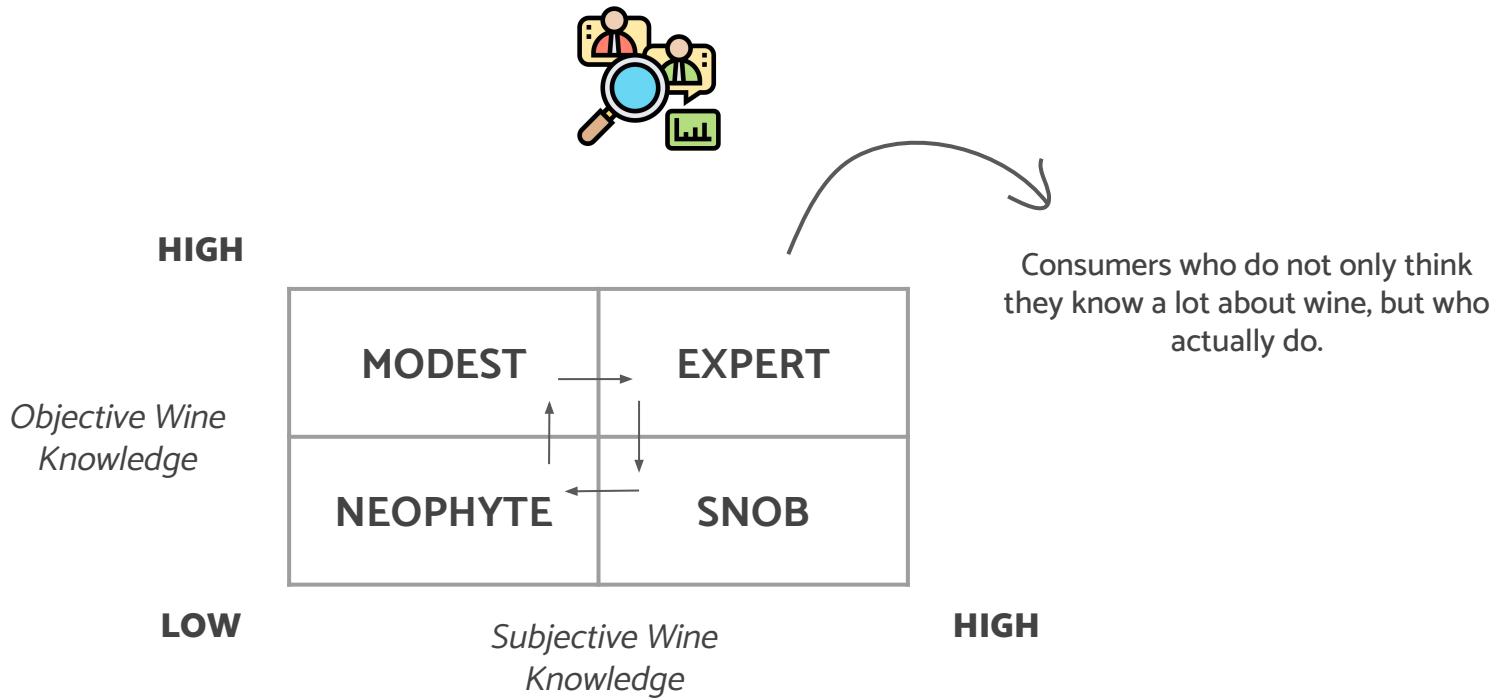
And educate the consumer to feel more sure in his/her choices





CONCLUSIONS AND FUTURE WORK

LIMITATIONS: SAMPLING ERROR



LIMITATIONS: SUBJECTIVITY



Sideways – Fox Searchlight

LIMITATIONS: PRICE DESCRIPTION

“CHEAP” VS “EXPENSIVE” WINE





PRICE DOES NOT NECESSARILY
REFLECT THE QUALITY OF A WINE

SWEETNESS



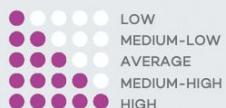
ACIDITY



TANNIN



ALCOHOL



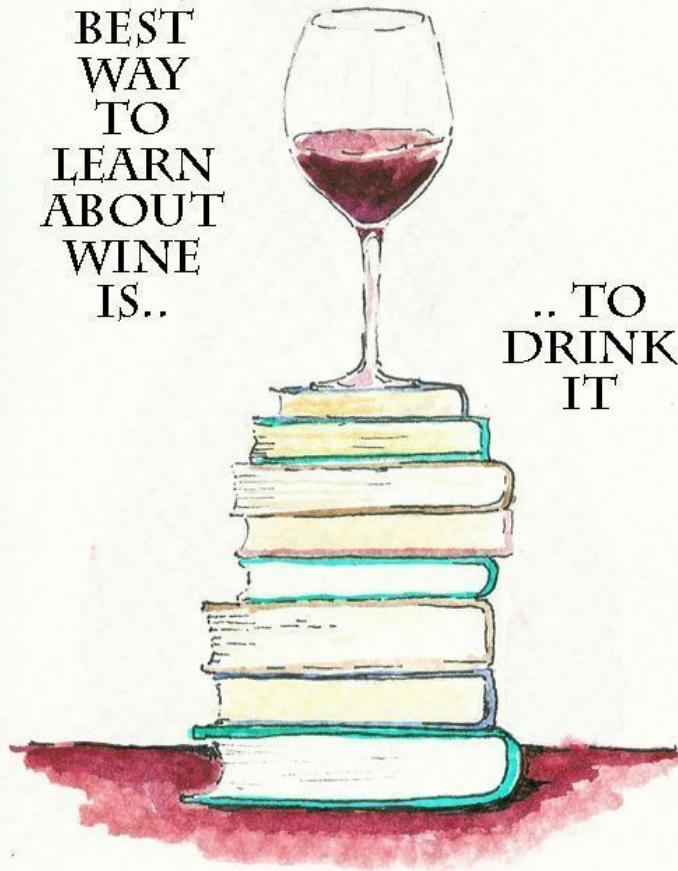
BODY



THE WORLD OF WINE IS ARBITRARY:

TASTE IS SUBJECTIVE
VALUE IS SUBJECTIVE
EXPERIENCE IS SUBJECTIVE

THE
BEST
WAY
TO
LEARN
ABOUT
WINE
IS..



.. TO
DRINK
IT



Thank you!