# Vanguard A/B Testing analysis

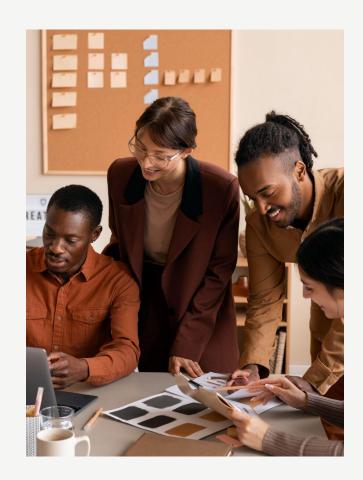
Team Beautiful Soup - Linda, Killé, Réda, Smita

### O1 Introduction

4 data analysts for the CX team at Vanguard:

- Who are our clients?
- Was the A/B testing useful?
- What results can we take out of the test?





### 02 Data Overview

#### We worked with three different data sets

- Client Profiles → Analysis of the client (age, gender, bank balance, etc)
- Digital Footprint → Consumer's behavior (number of visits, behavior on the site)
- Experiment → Which clients were interacting with the new vs old interface?

#### Data cleaning:

Identification of null values, duplicates and bugs in the process\_step

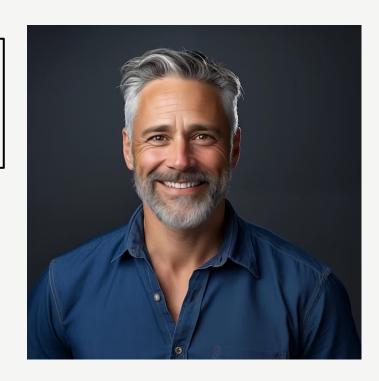
### 03 Persona

#### **John Stewart**

47 yo - Male

Client for **12 years** at Vanguard with **\$150k** in his balance

- He has visited the website **3 times** during the test
- He has called us 6 times in the 6 months before the test
- He has logged on the website 6 times before the test
- He has created 2 accounts in his time with us



### O4 Performance Metrics

#### Error rate

Did a client have to go back to a previous process\_step while trying to buy something?

#### Average time spent

How long does it take one customer to go from a step to the next one?

#### Completion rate

How many clients confirmed their purchases?

#### Bounce rate

Did clients connect to the app, and did no other step afterwards?

### O5 Hypothesis testing at 95%



#### µ error rate

H0:  $\mu$  error rate test =  $\mu$  error rate control

Alpha = 0.05 P-value = 1.28e-29

We reject the null hypothesis



#### µ completion

H0:  $\mu$  completion rate test =  $\mu$  completion rate control

Alpha: 0.05 P-value = 4.30e-48

There is a difference between the completion



#### μ breakeven

H0: Difference in completion is significant and meets the threshold

Alpha = 0.05P-value = 0.18

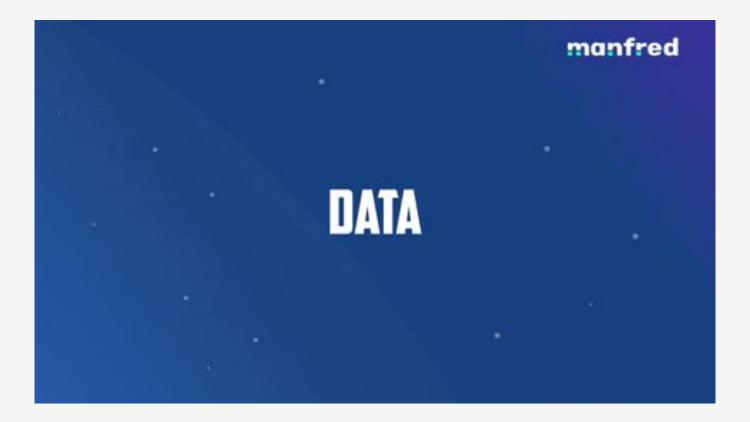
We reject the null hypothesis

### O6 Experiment Evaluation

#### Additional data that could have been beneficial:

- Infos about client behavior before the test :
  - → Did they visit more before ?
- Better gender segmentation :
  - → We have a lot of unknown gender. It would have been better to have more coherent data.
- What changed between the two design :
  - → More infos in the context to be able to identify what were the true factors of change
- Client reviews

### O7 Tableau Visualizations



### O8 Project Management

#### Project scope

It took us some time understand the meaning of the column, what each one represented and how we could exploit them.

#### Team reorganization

Ended up being a team of three mid project, which needed a lot of adjustment.

#### Technical tools

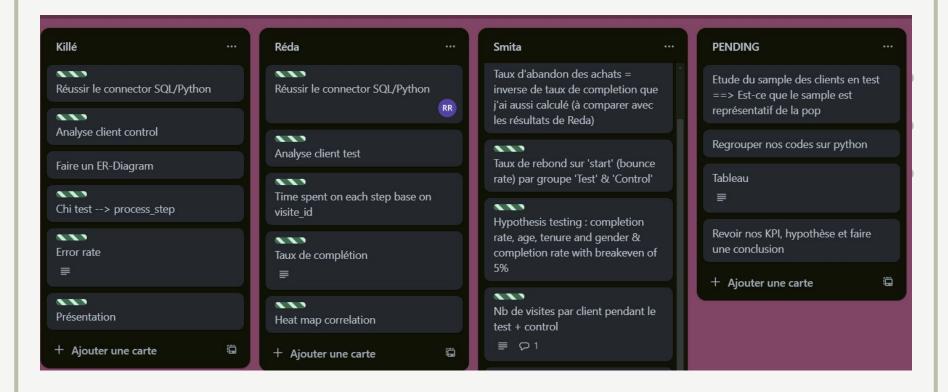
When should we use SQL, Python or Tableau?

#### Project management

Started using Deepnote but it was impossible to use SQL there.

→ Switched to Trello

#### TRELLO OVERVIEW



### O9 Technical Challenges

- Figuring out what data we wanted to extract
  - → What column was to take into account? Which one do we need to get rid of?
- Understanding the vocabulary
  - → A/B testing and KPI meaning. Difference between KPI and measurement
- How did we manage to survive through the project ?
  - → Splitting the tasks among each other
  - → Andy and Elnara, our rockstars ♥

### 10 Conclusion

#### The Test was successful on the customer side:

- Higher completion rate
- Less errors in the process
- Less bounce rate

#### Not successful on the company side:

 The rentability threshold was not reached → the test was too expensive for the company

#### Our advices for the future:

 Identify the factors that led to a higher conversion on the website and conduct a smaller A/B test.

## Thanks! (:

Do you have any questions?

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