



Vanguard A/B Testing analysis

Team Beautiful Soup - Linda, Killé, Réda, Smita



01 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 ?



Vanguard[®]



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



04

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 ?

05 Hypothesis testing at 95%



μ error rate

H_0 : μ error rate test = μ error rate control

Alpha = 0.05

P-value = 1.28e-29

We reject the null hypothesis



μ completion

H_0 : μ completion rate test = μ completion rate control

Alpha : 0.05

P-value = 4.30e-48

There is a difference between the completion



μ breakeven

H_0 : Difference in completion is significant and meets the threshold

Alpha = 0.05

P-value = 0.18

We reject the null hypothesis

06

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**

07 Tableau Visualizations



08 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

The screenshot shows a Trello board with four columns, each representing a different person or stage. Each column contains a list of task cards. Each card has a green progress bar at the top, a title, and a menu icon (three horizontal lines) at the bottom left. The 'Smita' column has a comment icon (speech bubble) at the bottom right of its last card. The 'PENDING' column has a plus icon and the text 'Ajouter une carte' at the bottom right.

- Killé**
 - Réussir le connector SQL/Python
 - Analyse client control
 - Faire un ER-Diagram
 - Chi test --> process_step
 - Error rate
 - Présentation
 - + Ajouter une carte
- Réda**
 - Réussir le connector SQL/Python (RR)
 - Analyse client test
 - Time spent on each step base on visite_id
 - Taux de complétion
 - Heat map correlation
 - + Ajouter une carte
- Smita**
 - Taux d'abandon des achats = inverse de taux de completion que j'ai aussi calculé (à comparer avec les résultats de Reda)
 - Taux de rebond sur 'start' (bounce rate) par groupe 'Test' & 'Control'
 - Hypothesis testing : completion rate, age, tenure and gender & completion rate with breakeven of 5%
 - Nb de visites par client pendant le test + control (1 comment)
- PENDING**
 - Etude du sample des clients en test ==> Est-ce que le sample est représentatif de la pop
 - Regrouper nos codes sur python
 - Tableau
 - Revoir nos KPI, hypothèse et faire une conclusion
 - + Ajouter une carte

- **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** ♥

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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