Vanguard®

AB Testing

Eliel
José
Rui

Vanguard background

- Vanguard is one of the largest investment management founds in the world.

- Its model is based on an investor friendly practices with focus on the long term capitals.

- With all the competitors and challenges of the new digital area, new design and new features of the web services needed to be evaluated and tested.

Descriptive statistics

Tableau

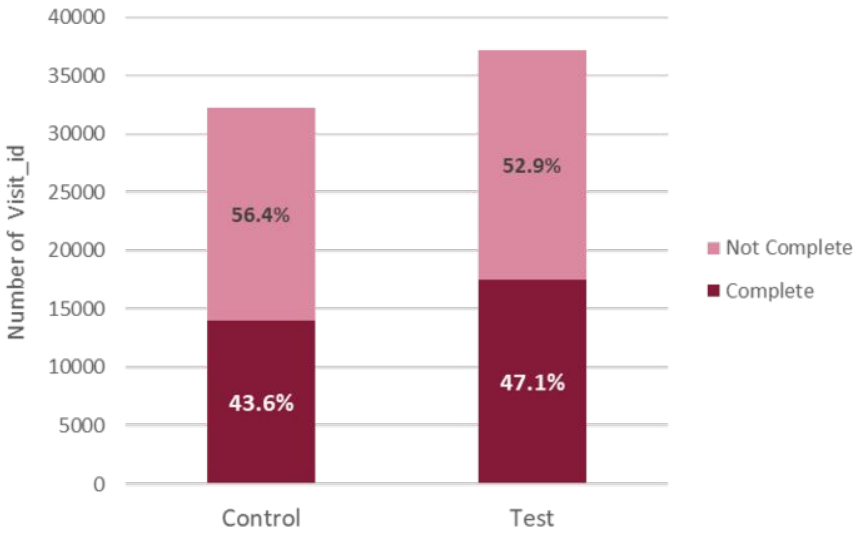
KPI's

- **Completion Rate**
  Test dependency of the group type and successful operation

- **Time Spent on a successful operation**
  Test group spends less time than control group

- **Error**
  - We define error when client return to “start”
  - When steps don’t follow the correct order timewise

Completion Rate



H0: The "group type" and the success of the operation is independent

H1: The "group type" and the success of the operation is dependent

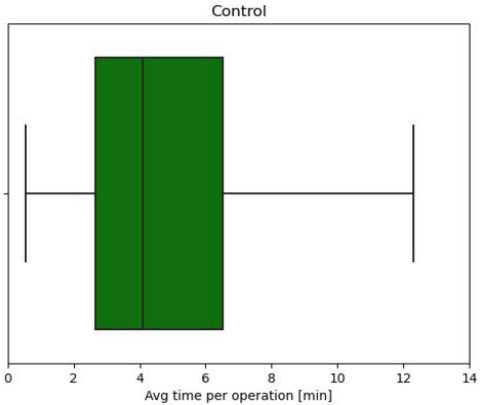
α = 0.05

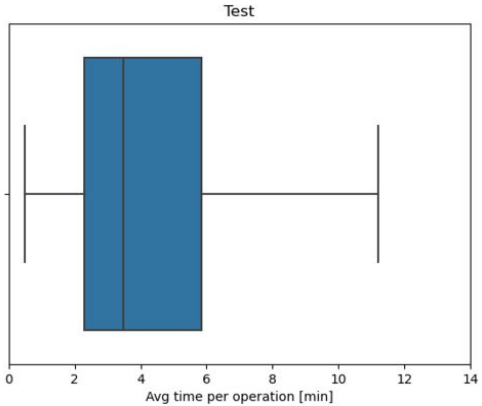
Chi Square Test

p-value = 7.97E-21

Cramer's-V-effect size : 0,036

Average time spent on a successful operation





H0: Average time spent on a successful op. on: TEST >= CONTROL

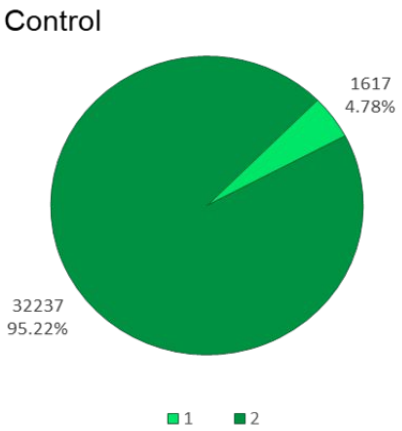
H1: Average time spent on a successful op. on: TEST < CONTROL

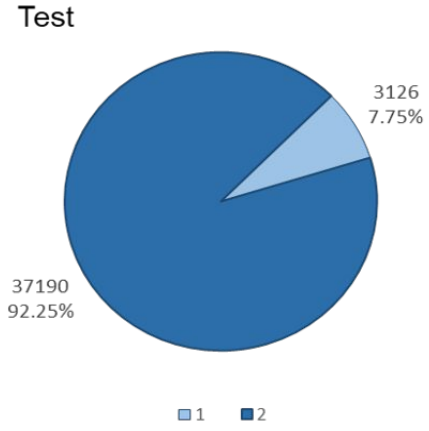
α = 0,05

Two sample T-test

p-value= 0,07

Error “return to start”





1 - Return to 'start' error
2 - Number of Visit_id

H0: Ratio of errors "return to 'start'": CONTROL >= TEST

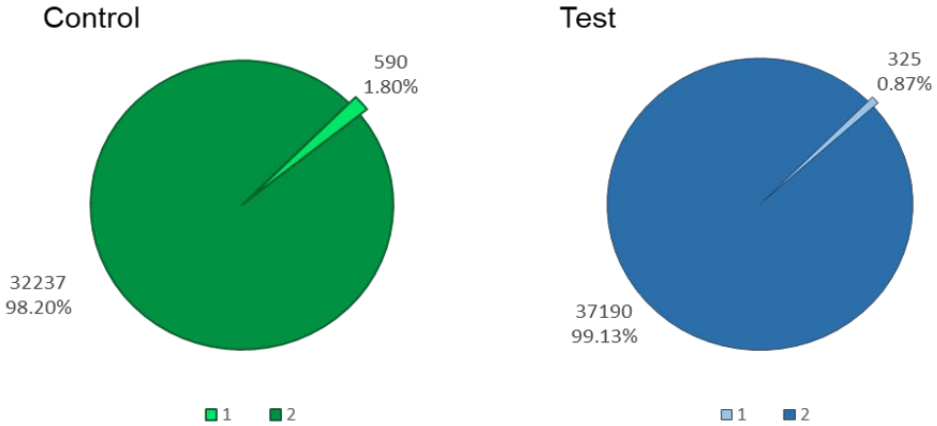
H1: Ratio of errors "return to 'start'": CONTROL < TEST

α = 0,05

z-test for proportions

p-value= 4,66E-70

Error “timestamp readings”



1 - Timestamp readings error
2 - Number of Visit_id

H0: Ratio of 'Timestamp' readings errors:

CONTROL <= TEST

H1: Ratio of 'Timestamp' readings errors:

CONTROL > TEST

α = 0,05

z-test for proportions

p-value = 1.54E-28

Conclusions

- From the results we obtained, we can see that there are differences between test and group control.
- For completion rate we verified that there is a dependency between test and control group
- For timestamp error, test group have statistically better results than the control group.
- For time spent and return to start error, control group have statistically better results.
- With this insights, the product needs to be improved and more data is necessary to evaluate the efficiency of the new product.