



Decisions by Data: Navigating A/B Testing for Impactful Outcomes | HUGO GOMES



Vanguard is a leading investment management company known for its low-cost mutual funds, ETFs, and retirement services. To meet changing client needs, Vanguard embarked on a digital experiment aimed at improving its online platform's User Interface (UI). The experiment aimed to enhance the user experience and streamline the online process for clients.

Did the new UI lead to higher completion rates?

Introduction



Client Profiles

client_id
clnt_tenure_yr
clnt_tenure_mnth
clnt_age
gendr
num_accts
bal
calls_6_mnth
logons_6_mnth

Digital FootPrints

client_id
visitor_id
visit_id
process_step
date_time

Experiment Roster

client_id
Variation

Data Overview



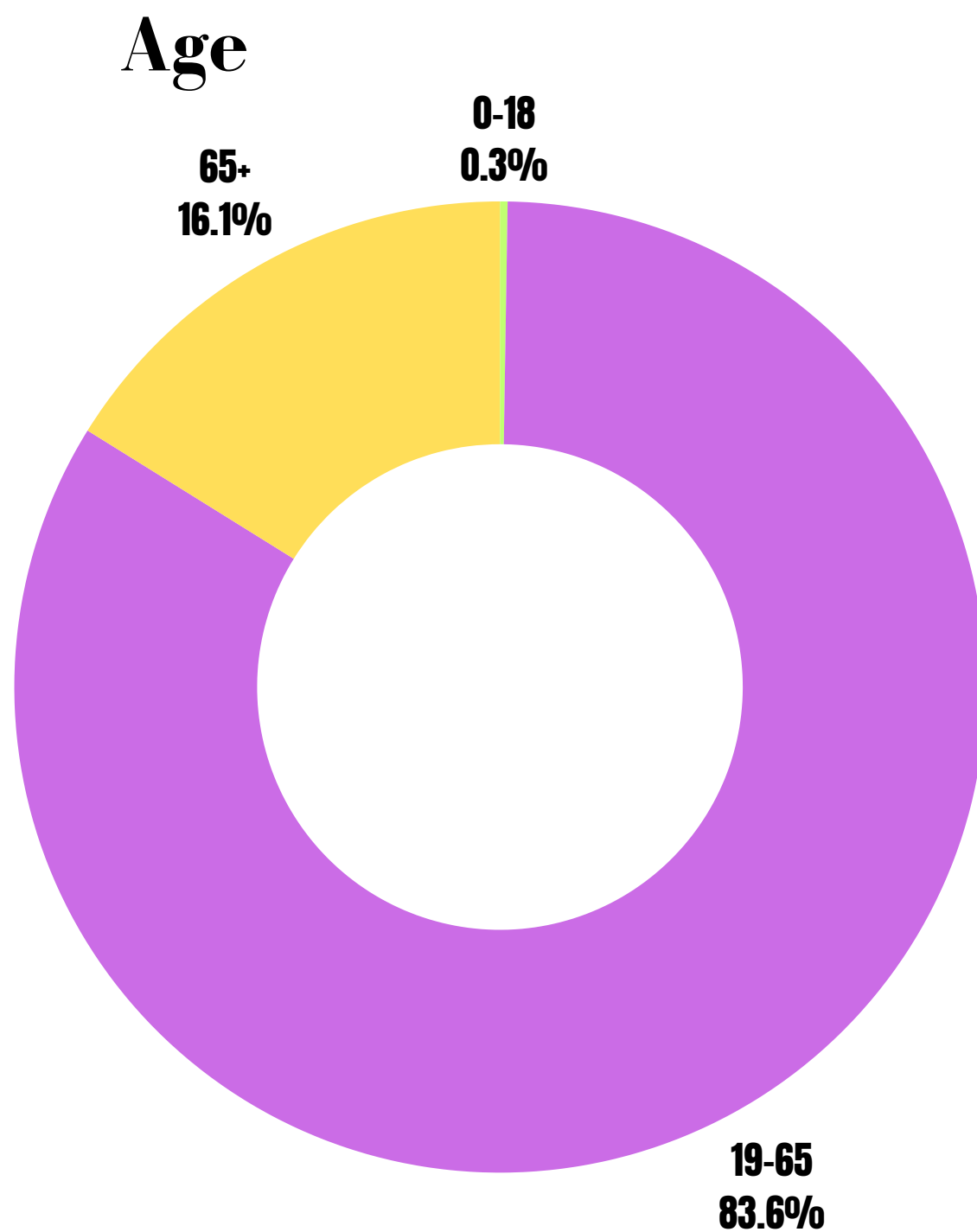
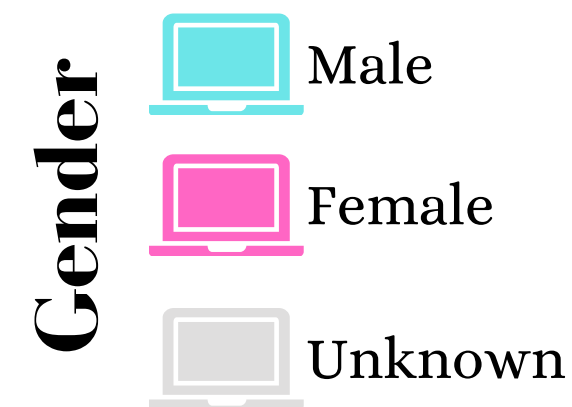
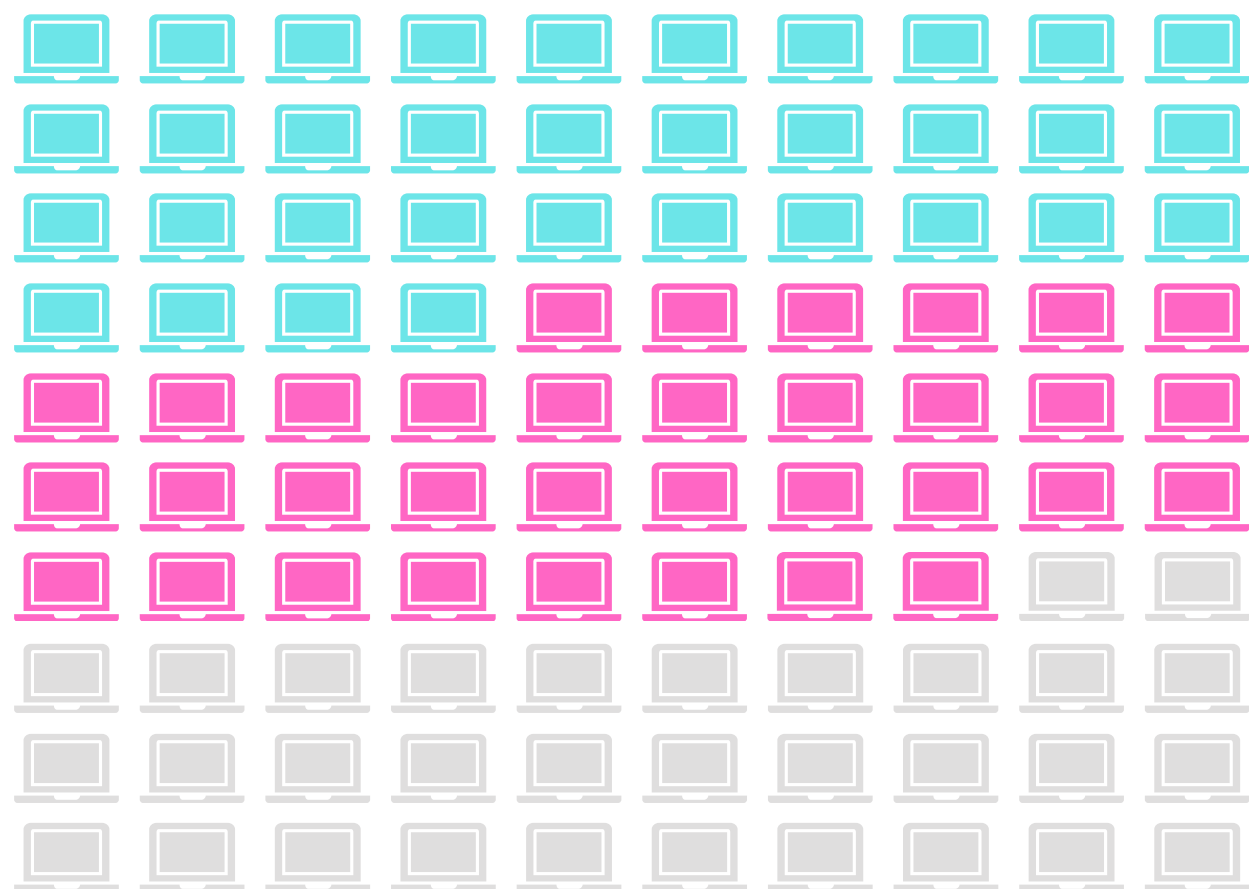
Control Group

32070 rows × 15 columns

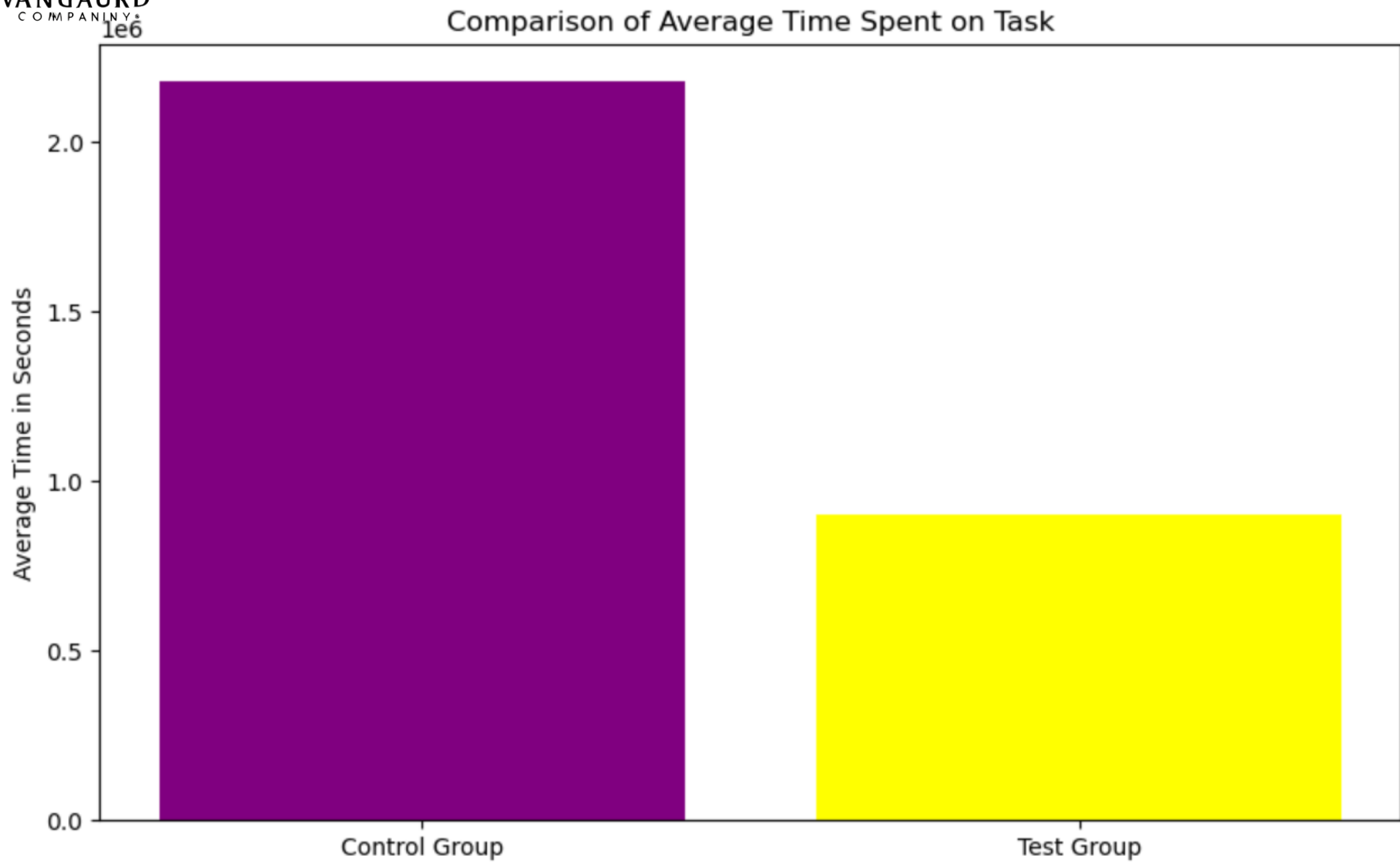
Test Group

37038 rows × 15 columns

Data Overview



Exploratory Data Analysis



Performance Metrics



H0 (Null Hypothesis): the completion rate for the Test group is different from the completion rate for the Control group

H0 (Null Hypothesis): The average progression step for the Test group is different from that of the Control group

Hypothesis Testing



In the Test group, completion rate and average progression are higher than in the Control group, suggesting that users in the Test group are making further progress through the process. Both chi-squared test and t-test indicate a statistically significant difference between the two groups.

H0 (Null Hypothesis): the completion rate for the Test group is different from the completion rate for the Control group

H0 (Null Hypothesis): The average progression step for the Test group is different from that of the Control group



Hypothesis Testing



Thank you!

Control Group

Completion Rate: 0.02, Average Progression: 0.13

Test Group

Completion Rate: 0.09 Average Progression: 0.40

Chi-squared test p-value for completion rates: 0.00

T-test p-value for average progression: 0.00