

Relationship of Gameplay with Psychological and Demographic Data

Our group concentrated on finding information about players and effective ways of comparing them and their gameplay styles. We explored the relationship between game statistics (like completion and speed)

the relationship between scores within various aspects of the game and their correlation to student demographic, personality, and S5 score.

Calculating Gameplay Rank to Compare Players

Players were ranked on their completion of the game (inferred from Challenge Stack logs) and average time spent completing the four minigames: Refusal, Knowledge, People, and Priority. Players were assigned a score according to the following formula:

$$\text{Score} = \text{Incomplete Levels} * 500 + \text{Avg. Minigame Playtime (secs)}$$

The lowest scores were from the “best” players who beat every level and had relatively low average minigame times. Players were then sectioned into two groups, the “top 20” and the “bottom 20.” The bottom ranked players completed the game (beat every level) but had the slowest minigame playtimes.

Predict Gameplay Rank Using Demographic and Personality Data (Linear Regression)

The user registration data is entered using a code that corresponds to the image and characteristic options chosen by the user. The demographic data, which is binary or categorical, is converted into numerical values and combined with registration data.

A linear regression is performed on the data, creating a cubic model. The model has an MSE of 1.29 and r^2 value of 0.99. The model allows us to predict how user demographic information and avatar design correspond to how quickly they will complete the game, which is represented by the Gameplay Rank. By matching up the test data with the user, we observed that students with lower Gameplay Rank had higher expected salaries, and felt more confident about refusing drugs and alcohol.

Relationship of Game Score and S5 Score

By mapping game play to week, we added up the scores accumulated in each stage of the game by the user over each S5 survey period. The data was then used to create histograms that showed the relationship between the scores in each part of the game, such as the People Sense, and the S5 score of the user. For example, as time went on, the user score under People Sense increased, and the range of S5 scores widened from 3-4 to 2.6-4, with more S5 means shifting to the left and showing that the students were better at refusing drugs.