

Appendix 7.2

As part of the description of population demographics in **chapter 7**, we sought to obtain an estimate for the *total hours* of Rocket League that each participant has played throughout their life. This was important particularly as this *total hours* measure is often cited as a variable of interest when expertise is discussed within the Rocket League community. When *total hours* is discussed, it is not in reference to the total amount of time spent in competitive Rocket League matches, but rather the total amount of time spent with the game application open (including time in matches, training, changing car designs, and idle time). This distinction is important as for many individuals, time spent in training platforms outweighs time spent in matches. Depending on the play history of an individual, obtaining this estimate can be tricky for multiple reasons.

Firstly, individuals can play Rocket League against one another on multiple “gaming platforms”. Such platforms include Steam, Epic (both PC based platforms), Playstation 5, Playstation 4, Xbox One, and Nintendo Switch (we note that no participants included in our research outlined in **chapter 7** reported playing Rocket League on the Nintendo Switch). While gameplay is identical between platforms (with the exception of Nintendo Switch), and individuals can play against individuals on other platforms, the platforms differ in their accessibility to data relating to total gameplay time.

For individuals with gameplay on Steam, Epic, or Playstation 5 accounts, exact values for *total hours* played on these platforms could be attained. For individuals with gameplay on Xbox One and Playstation 4, exact values could not be attained; however if the participant had access to the account used, estimates could be attained using the following method:

Estimation using in-game values

Within the game itself, there is a menu which provides the user with statistics regarding their total matches played and time spent in a match (see Appendix Figure 7.1). We note that the latter is specifically time spent in matches, not *total hours* played.

We obtained a sample ($N = 12$), from which we were able to obtain both platform-derived *total hours* and game-derived *matches played*. From this sample, we obtained a constant representing the mean *total hours per match played*, according the following formula.

$$Constant = \frac{Matches\ Played}{Total\ Hours}$$

Using this formula, we obtained a constant of 0.281 hours per match played. We then used this constant to estimate the *total hours* for participants who could provide *matches played* but not *total hours*, using the following formula:

$$Total\ Hours = 0.281 \times Matches\ Played$$

Further Estimation

If a participant had played Rocket League previously on Playstation 4 or Xbox One however did not have access to the account, the participant was asked to provide their own estimate for total hours played on this platform. If the participant could not provide a confident estimate of this value, the *hours played* metrics for the individual was not estimated. This resulted in three participants without an estimate for *hours played*; this would instead be estimated using a statistical approach (discussed in the results section of **chapter 7**). Lastly, we note that many participants had played Rocket League on multiple different platforms. For these participants, the *total hours* value was estimated by summing the values provided/ estimated for each platform, using the methods discussed above.



Appendix Figure 7.2. An example of the user statistic menu within Rocket League.

The specific statistics provided in this menu are consistent for individuals, irrespective of the game platform they use.