Project

Analyse the changes in Formula One safety.

1. Has the rate of injury due to accidents in Formula One events decreased over time?
2. Show the number of driver injuries relative to the number of race participants.
3. Show the number of accidents/collisions over time and compare this to the number of injuries.

For all 3 questions Data was sourced via the Kaggle website. This was chosen as it gave us a complete collection of data covering every year of Formula One (1970-2022). The dataset was broken into 14 individual datasets.

I chose the relevant datasets required for each of the three questions and loaded these into my notebooks and merged them together. All relevant columns were brought together into a single dataframe for each of the three notebooks

1. The injury data was cleaned and brought together so that it could be arranged and sorted easily by year.

A chart was created that visualised the number of injuries per season.

1. The drivers entered per race data was brought together and put together with the injury data.

A chart was created that visualised the number of entrants per race and compared with the number of injuries.

1. Similar to how I was able to clean the data and merge information together to find the injury data per season I was able to bring together the data to find the number of accidents/collisions per season.

Overall, I would say that the results were not as I would have expected. My expectations were that there would have been a much higher rate of injuries in the early years and decades compared to the more modern cars and safety features.

Accidents v injuries do show a reduction of accidents over time since the late 1970’s through to the most recent season in 2022.

OBSERVATIONS

Injury Rate

Across the 73 years of Formula One competition, there have been a total of 21 recorded injuries to drivers.

The maximum number of injuries in one season was 3 in 1994. There were two large periods of time where no inuries were recorded, 1950 - 1965 and 2012 to 2022.

This would show that Formula One has had a relatively safe record across the 73 seasons of competition.

This data does not include qualifying or practice sessions nor any test events.

OBSERVATIONS

Driver injuries v Participants

In total there have been 25,840 entrants (total drivers) across 1,079 races and only 21 recorded injuries across the 73 seasons of Formula One.

Through the 1950's and 1960's, the number of drivers entered into races varied widely from the mid teens upto a high of 55 in one race event in 1954. Since the mid 90's driver numbers have been normalised to the mid to low 20's per race event.

The number of drivers entered in races bares no correlation to the number of injuries to drivers over the 73 seasons of Formula One.

This data does not include qualifying or practice sessions nor any test events

OBSERVATIONS

Accident v Injury

While accidents took a sharp up turn through the 1970s there has been a downward trend across the remaining years until the current 2022 season.

The amount of injury figures have not shown to have been affected by the upturn during the 1970's or any other era that Formula One races have been held, except for 1994 where there were 49 accidents (highest number recorded since the 1970's) of which we see there were 3 injuries (the highest of any year).

No injuries have been recorded across the years of 1950 - 1965 and 2012 to 2022.

The latter part of 2000's showed accidents in the mid to high 30's per year compared to low to mid 20's per year in the last 10 years.

Overall from the 1970's through to the current season there has seen a drop off of accidents along with no injuries to drivers in the last decade which can be put down to an overall improvement of Safety in Formula One.

This data does not include qualifying or practice sessions nor any test events