Handedness Performance of Baseball Athletes

Summary

This visualization explores the differences of the performances among left-handed, right-handed, and both-handed players. The Left-handed players have a better performance in home run and batting averages than right-handed and both handed athletes.

Links to my Tableau workbooks

Link to my initial tableau visualization:
https://public.tableau.com/views/Baseball_42/ofAthletes?:embed=y&:display_count=yes

Link to my final tableau visualization:
https://public.tableau.com/shared/QYTCW86JN?:display_count=yes

Design Initial Tableau Visualization

Slide 1: Number of Athletes by Handedness

This graph is to show the number of athletes who are left-handed, right-handed, and both-handed. Bar graphs are a good choice to show the different number of athletes per handedness.

Slide 2: Batting Avg & HR by Handedness

This graph shows the average of the batting average by handedness and the average of home runs by handedness. I thought bar graph will show the variances between the handedness of athletes. On the batting average graph, both handed and left handed have the same average of batting average.

Slide 3: HR & Batting Avg by Weight and Height

This visualization explores if weight and height correlates to higher home runs and higher batting averages. I thought that scatter plots with circles that are not filled and circles that vary in sizes of hr and batting avg will be a good fit for the exploration. The reason is to find if there is correlation and to find outliers.

Slide 4: HR by Weight and Height

This shows home runs by weight and home runs by height. I wanted to show if the players who have high home runs have different weight and height than the rest. I used scatterplot because it's excellent in showing correlation and outliers in my opinion. However, this graph proved that

there was no correlation. The reason is that the outliers who are heavier or taller have low number of home runs.

Slide 5: Batting Avg by Weight and Height

Similar to slide 4, this shows batting avg by weight and batting avg by height. I wanted to show if the players who have high batting avg have different weight and height in comparison to other players. It does. There were a few outliers who are heavier or taller have higher batting avg than the rest of the players. I think that weight plays a contributor of how hard the batter hits. I use the scatterplot to show the correlation of weight and height separately to batting avg and to show where the outliers lie.

Slide 6: Batting Avg vs. HR by Athletes

In this slide, I wanted to see if there is a correlation between batting average and home runs among all athletes. I used scatterplot to see if there is such thing. I was proven false yet again. There was no correlation.

Slide 7: Batting Avg vs. HR by Handedness

I wanted to see if there is a difference of batting avg vs. hr by handedness. Scatterplot was used to see the "spreadness" of the points (plot of every athlete). The graph shows how the spread of batting average differs by handedness.

Slide 8: Top 10

This shows the similarity among the athletes who are in top 10% of home runs and top 10% of batting average. I chose bar graphs for this one because I want to compare values between athletes since each athlete have 1 home run value and 1 batting average value. I think bar graphs is the best graph for it.

Feedback on initial visualization

For the initial visualization, I got feedback from my two friends, Donald and Cherika. Their responses were recorded. They are shown below:

Cherika's Feedback

What do you notice in the visualization?
- Right-handed athletes dominate the sample in terms of numbers
- Most are clustered around a certain weight and height with a few outliers

What questions do you have about the data?
- What about their dominant hand? It would be interesting to see if the top 10 athletes are all left handed, for eg
- Also, what is the relationship between batting average and HRs

What relationships do you notice?
- Based on your graph, it seems that the athletes who are left-handed have higher batting averages and HR numbers. Would be curious as to how you chose your sample.
- As you stated there isn't a correlation b'w height and weight and avgs but there is a cluster of data at a certain weight/height pt which may suggest an average weight and height for athletes. The outliers in terms of height and weight seem to have higher batting averages but lower HRs (maybe they are more powerful hitters but less likely to finish a HR?)

What do you think is the main takeaway from this visualization?
- Not sure. Maybe that despite the fact that they represent a small percentage of the baseball athletes, left-handed players do relatively well as measured by HR and batting average.
- No relationship seems to exist between weight and height.

Is there something you don't understand in the graphic?
- Not sure if we needed to see the spread by all athletes.
- The third tab (batting average and HR by weight and height of athletes) was a little hard to read

Donald's Feedback

What do you notice in the visualization?
There is a clear distinction between batting averages and home runs.

What relationships do you notice?
In the Top 10 visualizations, I noticed that in 9 players have same batting avg. It seems to me that batting average is far easier to maintained than home runs. Home runs is a dedicated skill that requires tons of practice to achieve. In a baseball game, home runs happen once or twice.

What is the main takeaway from this visualization?

Design Final Tableau Visualization

Slide 1: Number of Athletes

This slide remains the same from the initial visualization. I decided to include it in the final visualization to show number of athletes for each handedness.

Slide 2: HR & Batting Avg by Weight and Height

In this visualization, I showed graphs side by side instead of one top of the other. This is much easier to analyze the graphs.

Slide 3: Batting Avg vs. HR by Handedness

I have decided to include it in the final visualization to show differences of spread of the batting avg axis by handedness. I think that it shows slight differences of batting avg performances by handedness which is important.

Slide 4: Top 10

I deleted the "Top 10" (slide 8) and replaced it with "Top 10% Filtered by Handedness". This shows the differences of top 10% among the left handed, right handed, and both handed athletes separately.

Slide 5: Boxplot of Batting Avg and Home Runs

I changed the bar graph of the batting avg and avg home runs (slide 2) to a histogram. I realized that in the bar graph of the batting avg between the handedness, the both-handed and left-handed have the same batting avg. So, I changed it to boxplots to reveal more statistics of batting avg and home runs between the handedness of athletes.

I decided to not include the following graphs to my final visualization:
- **Batting avg vs home runs of all athletes (slide 6).** From Cherika's feedback, there is no need for that graph. From her suggestion, I replaced it with the batting avg vs home runs by handedness of athletes.
- **HR by weight and height (slide 4) and Batting avg by weight and height (slide 5).** I felt that the overall graph of "HR & batting avg by weight and height" explains the same story as the weight and height separately.

Feedback from Final Visualization

I received better feedback from Cherika. Her questions from the 1st feedback was answered. She has no additional questions. Donald gave me the same feedback as before. He has no questions.