ABSTRACT

This report presents a redesign of a poorly constructed graph [1] that attempted to show the performance of Indian batsmen against left-arm bowlers since the 2015 cricket World Cup. The original graph was ineffective in illustrating the data due to several flaws, such as a lack of accurate pointers, the use of non-standard figures instead of bars, overlapped plots, and improper scales. Our team took information from ESPN CricInfo and used R to redraw three graphs to fix these problems. These graphs effectively illustrate the batting average and number of dismissals of five Indian batsmen against left-arm seamers since the 2015 World Cup. Our redesign also includes the addition of grid lines, scales, and gradients to make the graphs easier to read and interpret. Overall, this project demonstrates the importance of proper graph design and the use of appropriate figures to represent data.

INTRODUCTION

In recent times, data visualization has become an essential part of data analysis. Visualizing data can help to communicate insights and findings effectively to stakeholders, whether they are technical or non-technical. Therefore, it is crucial to create effective visualizations that accurately represent the data and make it easy for viewers to understand and draw insights from it.

This project aims to redesign a poorly designed graph that illustrates the performance of Indian batsmen against left-arm bowlers since the 2015 Cricket World Cup. The original graph fails to accurately show the average runs and dismissals of the five batsmen, using non-standard figures that are distracting and hide the information. The flaws in the original graph make it difficult for viewers to understand the data and draw insights from it, which highlights the need for redesigning the graph.

ORIGINAL VISUALISATION AND DATASET

Why is this a bad visualization?

The below graph attempts to show the average runs and dismissals of five batsmen, it falls short in several ways.

Firstly, the scale on the left, y-axis is completely useless. It's not clear what units the scale is even in, and there are no labels or markers to indicate what the numbers mean. This makes it difficult for viewers to interpret the data.

Secondly, the number in the red circle (which appears to be the total number of dismissals) is not clearly labeled. Viewers may not immediately understand what this number represents, and it's not obvious how it relates to the rest of the graph.

Lastly, the use of non-standard figures in place of bars is distracting and actually hides information. Each batsman is playing a different type of shot, and this only serves to clutter the graph and make it harder to read. A simple bar graph could convey the same information much more clearly.
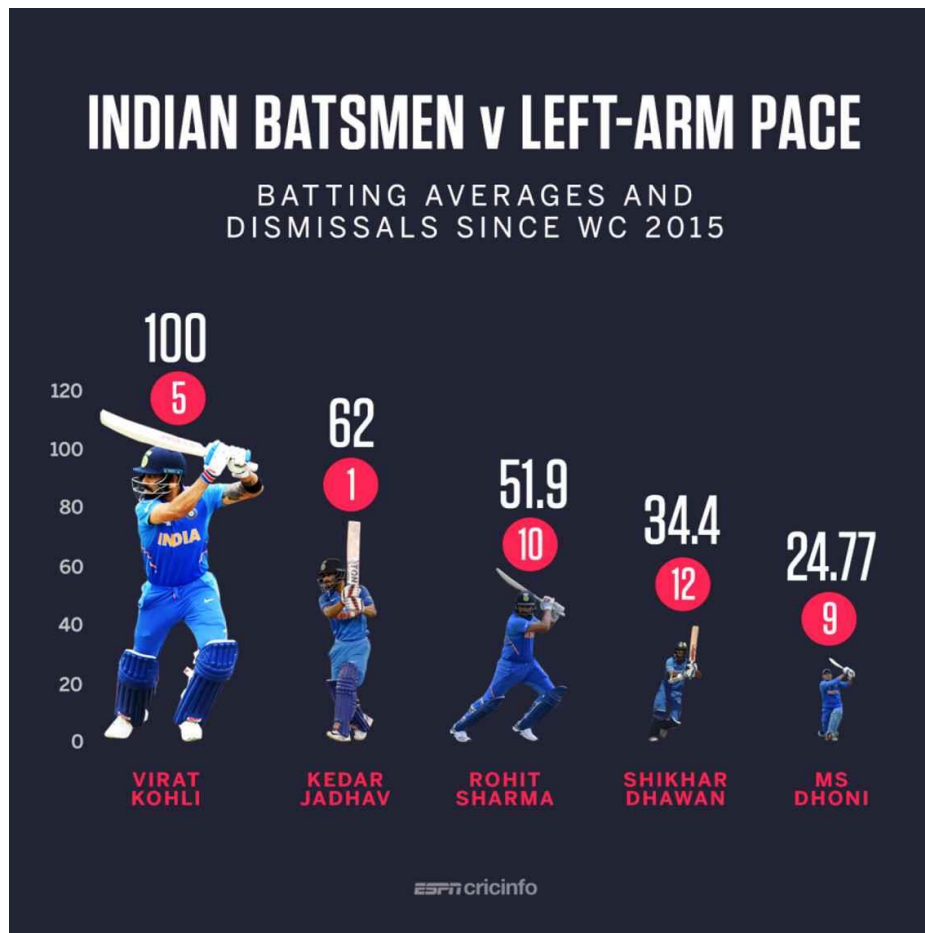

Figure 1: Original Visualization [1]

To address these issues, our team extracted data from ESPN CricInfo and utilized R to create three redesigned graphs that better illustrate the batting average and number of dismissals of five Indian batsmen against left-arm seamers since the 2015 World Cup. We also incorporated best practices in graph design, such as the use of grid lines, scales, and gradients, to make our graphs easier to read and interpret. Through this project, we aim to demonstrate the importance of proper graph design and the role it plays in effective data communication.

METHODOLOGY

To redesign the original graph [1], our team utilized R to extract data [2] from ESPN cricinfo [3]. We then created three redesigned graphs using ggplot2 [4] package in R, which effectively illustrate the performance of five Indian batsmen against left-arm seamers since the 2015 World Cup.

The three Redesigned graphs include:

1. Batting average of 5 Indian batsmen against left-arm seamers since the 2015 World Cup
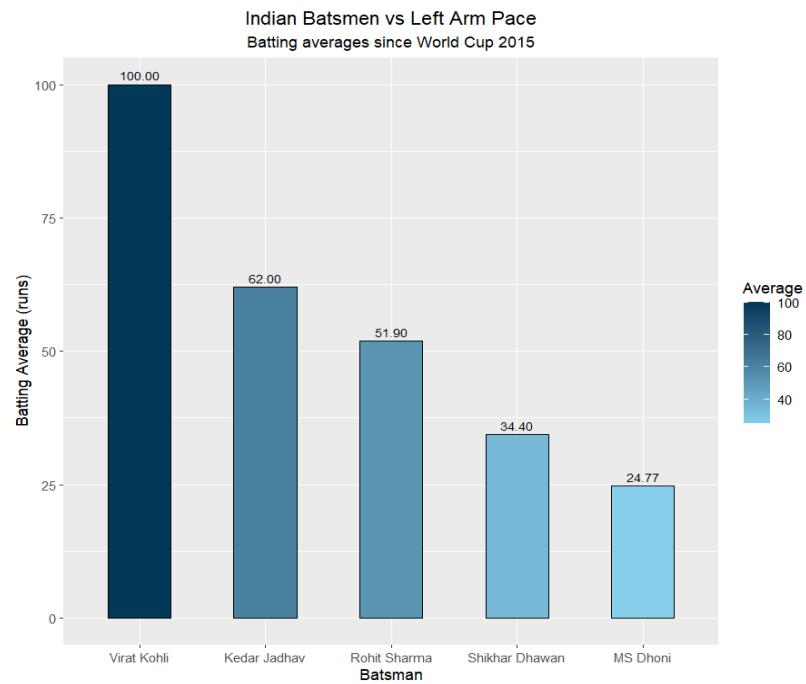
Indian Batsmen vs Left Arm Pace
Batting averages since World Cup 2015

Figure 2: Redesigned Graph 1

2. Number of dismissals of 5 Indian batsmen against left-arm seamers since the 2015 World Cup
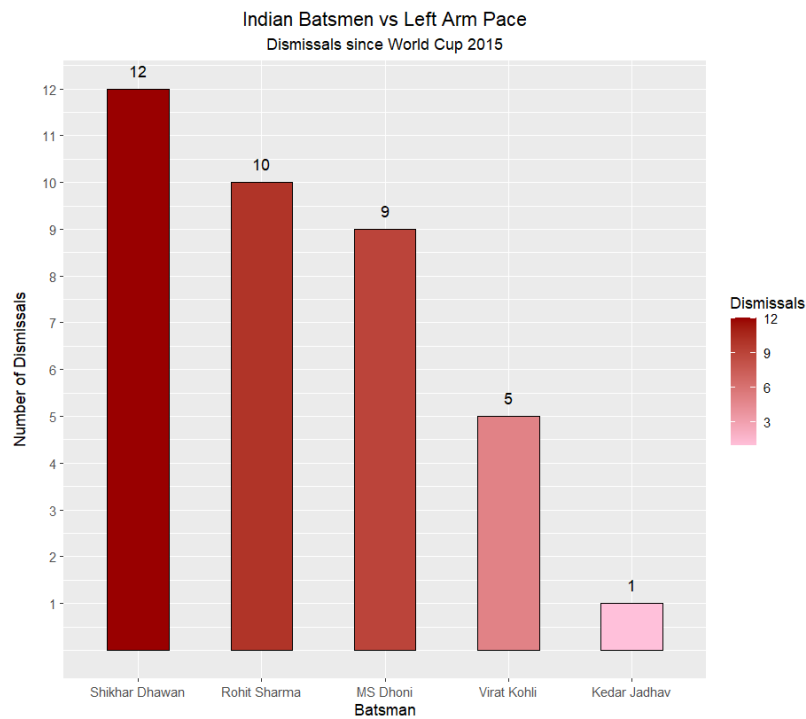
Indian Batsmen vs Left Arm Pace
Dismissals since World Cup 2015

Figure 3: Redesigned Graph 2

3. Both batting average and number of dismissals of 5 Indian batsmen against left-arm seamers.

Indian Batsmen vs Left Arm Pace
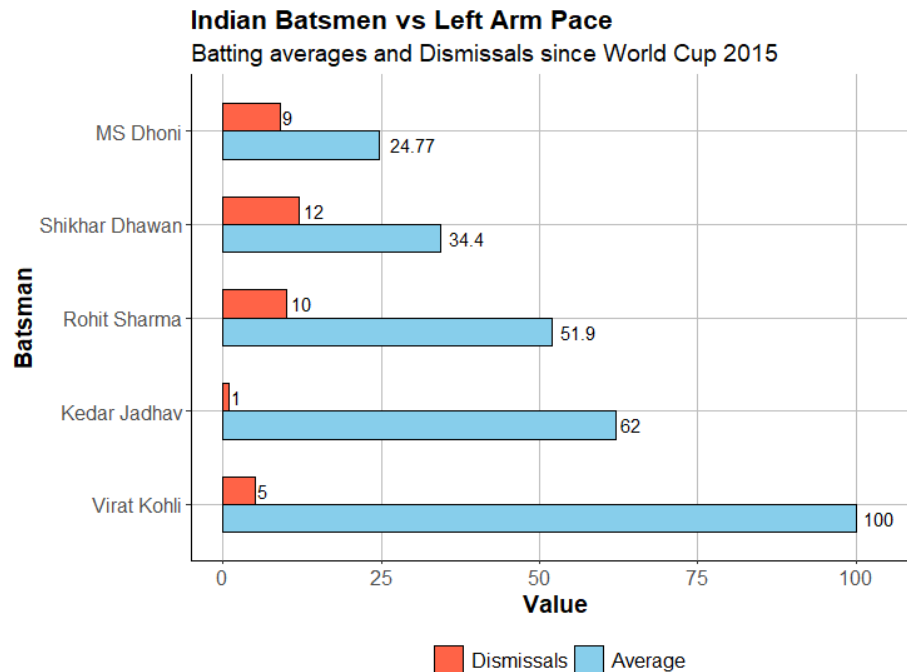Batting averages and Dismissals since World Cup 2015

Figure 4: Redesigned Graph 3

To address the flaws in the original graph, we made several design choices, such as using standard bars instead of non-standard figures, using appropriate scales and axis labels, and adding grid lines and gradients for easier interpretation. We also labeled the bar plots and combined the two separate graphs into one for easy comparison.

RESULTS

The three redesigned graphs effectively illustrate the performance of Indian batsmen against left-arm seamers since the 2015 World Cup. The first graph shows that Virat Kohli has the highest batting average against left-arm pace, while the second graph shows that MS Dhoni has the highest number of dismissals. The third graph combines both pieces of information, making it easy to compare the performance of each batsman against left-arm pace. The addition of grid lines, scales, and gradients makes the graphs easier to read and interpret, and the use of standard bars instead of non-standard figures simplifies the presentation of data.

CONCLUSION

Our study demonstrated the importance of using appropriate graphs to represent data accurately and clearly. We found that a poorly designed graph can distort the data and lead to incorrect conclusions. Therefore, it is essential to incorporate design principles when creating graphs.

Our redesigned graphs incorporated design improvements such as grid lines, scales, gradients, and labeling, which made the graphs more accurate, clear, and readable. Our analysis of the data revealed that Virat Kohli has the highest batting average against left-arm pace among the five Indian batsmen, while MS Dhoni has the highest number of dismissals.

Overall, this project helped us develop our skills in data analysis, data visualization, and data-driven decision-making. It also highlighted the importance of using appropriate graphs to represent data and the need to incorporate design principles when creating graphs.

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DATASET:

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ORIGINAL VISUALISATION:

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