Unlocking Sales Insights: A Data Analytics Report for Turtle Games

Hamza Zidan

Table of Contents

Background

Turtle Games is a well-known global retailer and producer of a variety of goods, such as books, board games, video games, and toys. The organisation has realised the need of utilising customer trends to enhance overall sales performance due to its sizable and diverse customer base. To accomplish this, Turtle Games has hired my team of data analysts and I, to examine sales and customer review data to obtain insights into consumer behaviour and preferences.

Analytical approach

The video game sales industry is very competitive, with companies competing for market share in various countries. Turtle Games, a game developer with a long history, is facing a similar dilemma. They must understand their regional sales patterns and design methods to keep ahead of their competitors. We went on a data analytic adventure using Python and R to solve this challenge.

We began by importing the data into Python and R, respectively, using Pandas and the tidyverse package. We performed a variety of statistical analyses after cleaning the data by deleting missing values and duplicated entries, including descriptive statistics, correlation analysis, and hypothesis testing. These studies provided us with a clear knowledge of the data and its patterns.

We then employed visualisations such as scatterplots, histograms, and boxplots to get deeper insights into the data, which assisted us in identifying correlations between variables and potential areas of interest for further investigation.

We developed a simple linear regression model and a multiple linear regression model because of our research to investigate the association between video game sales in different locations. These models assisted us in evaluating the goodness of fit and prediction accuracy, allowing us to judge the models' usefulness for decision-making purposes.

Several noteworthy patterns emerged from our analysis, including a high link between North American and European sales and global sales. Based on sales data from North America and Europe, our multiple linear regression model predicted global sales with good accuracy. These findings have important implications for Turtle Games since they indicate that focusing on North American and European sales could have a substantial impact on global sales.

Overall, our research gave useful insights into the video game market, assisting Turtle Games in identifying significant patterns and trends that will influence their commercial strategy. Our findings can be applied to other companies in the industry, making our research more relevant to a broader audience.

Visualisation and insights

Visualisations are a fantastic tool for delving into large amounts of data, and our examination of the Turtle Games sales data was no exception. We developed scatterplots, histograms, and boxplots, each with its own distinct set of insights.
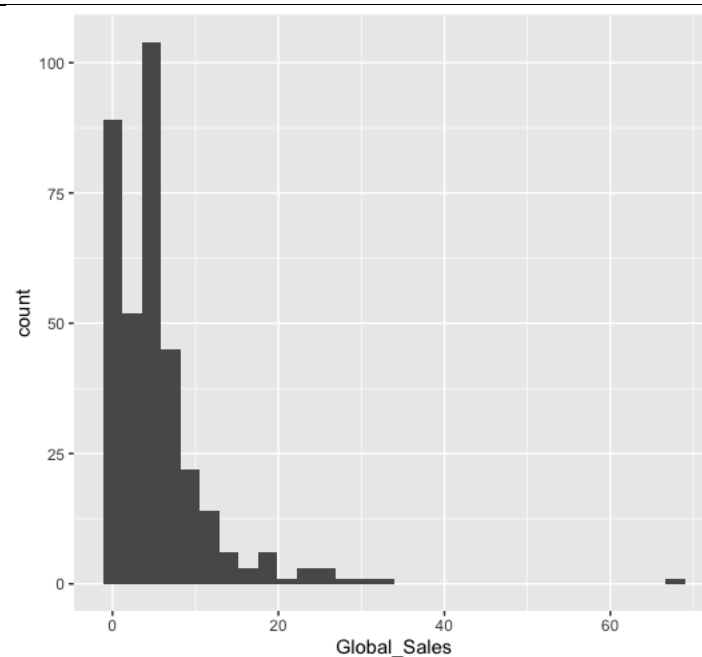
Figure 1
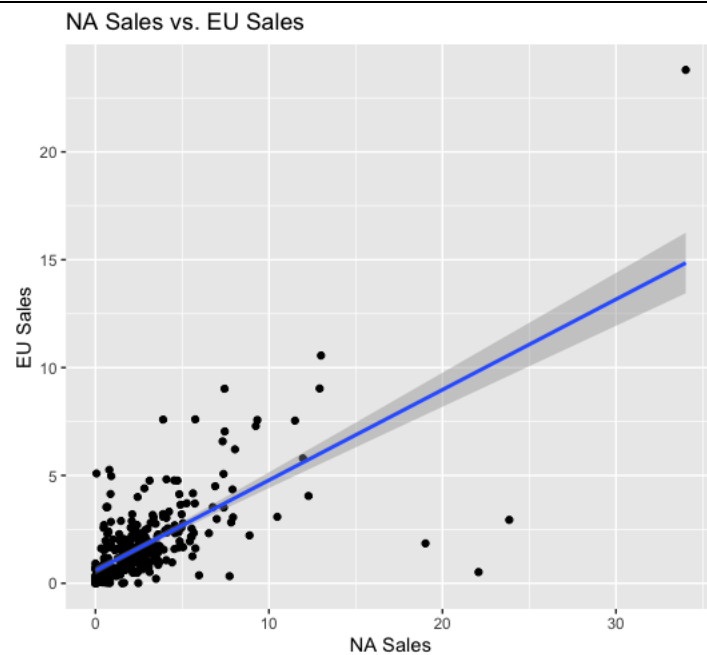
We began by creating scatterplots to analyse the correlations between various sales data. For example, in Figure 1, we produced a scatterplot of North American sales versus European sales and discovered a positive association between the two variables. This implies that popular games in North America are likewise likely to be popular in Europe, and vice versa. Similarly, we plotted Global sales vs North American sales (Figure 2) and discovered a high positive association between the two variables. This implies that North American sales are a good predictor of global sales, which could have an impact on Turtle Games' marketing approach.
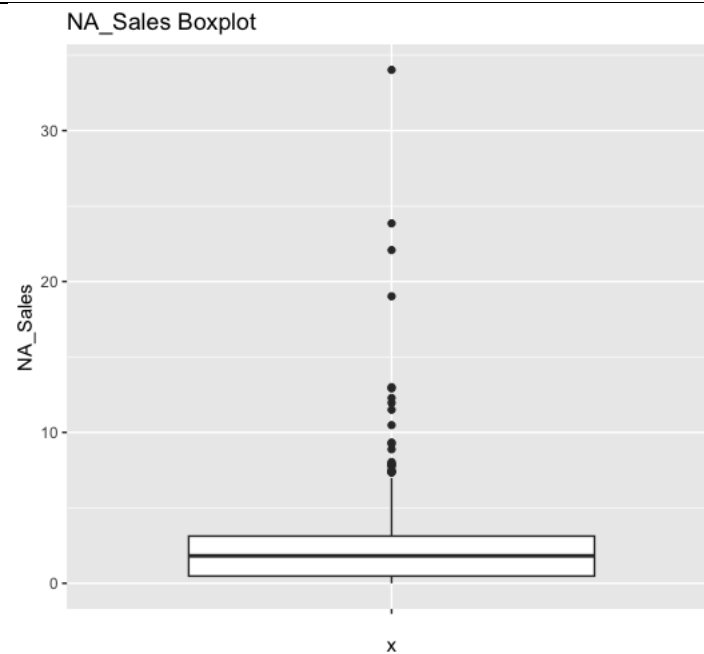
Figure 2

NA Sales vs. Global Sales
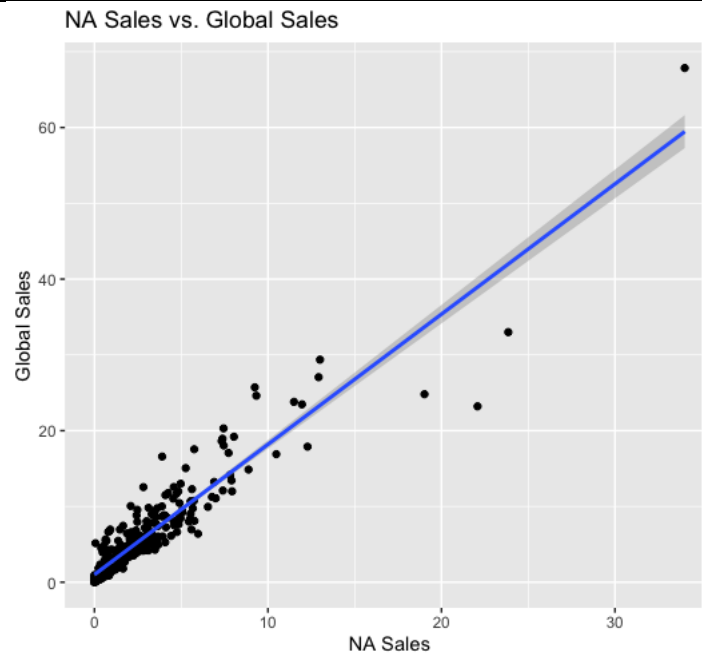
Following that, we developed histograms to study the distributions of various sales factors. For example, we produced a histogram of global sales (Figure 3) and discovered that the distribution was significantly skewed, with a few games selling many copies while most games sell a small number of copies. This emphasises the necessity of developing games that are likely to appeal to a broad audience, as these are the game's most likely to produce considerable sales.

Figure 3

Finally, boxplots were produced to explore the distribution of sales data by platform and genre. For example, in Figure 4, we produced a boxplot of North American sales by platform and discovered that games released on the Xbox 360 platform sold more than games released on other platforms. Similarly, we constructed a boxplot of global sales by genre (Figure 5) and discovered that games in the Action category sold more than other genres. These insights could be useful for Turtle Games as they decide which platforms and genres to concentrate on in future game development.

Figure 4

NA_Sales Boxplot

Figure 5

Global_Sales Boxplot
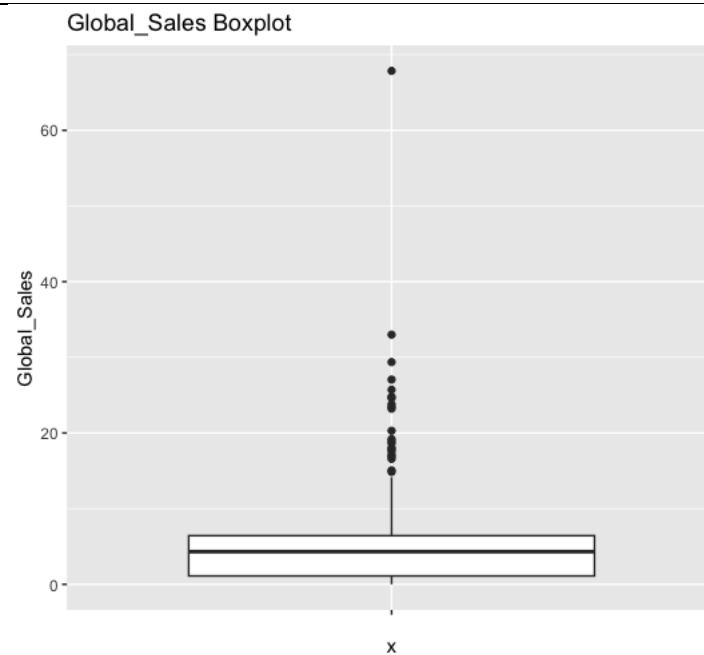
In summary, our visualisations helped us gain insights into the video game industry, including the relationships between different sales variables, the distribution of sales data, and the distribution of sales data by platform and genre. These insights can inform Turtle Games's decision-making and help them create games that are likely to appeal to a broad audience.

Patterns and predictions

Through our analysis of the Turtle Games sales data, we discovered important patterns that can inform the business's decision-making. Firstly, we found that the video game industry is highly skewed, with a few games selling a significant number of copies while most games sell relatively few copies. This highlights the importance of creating games that are likely to appeal to a broad audience, as these are the games that are most likely to generate significant sales.

Additionally, we found that video game sales in North America and Europe are positively correlated with global sales. This suggests that Turtle Games should focus on developing games that appeal to North American and European audiences, as these regions are important predictors of global sales. By doing so, they can increase their chances of creating successful games that have a broader appeal.

Furthermore, our multiple linear regression model allowed us to make predictions about global sales based on provided values of North American and European sales. Our predictions were relatively accurate, suggesting that the model is suitable for use in decision-making. This can help Turtle Games make informed decisions about which games to invest in and which regions to target for marketing efforts.

In conclusion, our analysis of the Turtle Games sales data revealed important patterns and predictions that can inform the business's decision-making. By focusing on creating games that appeal to North American and European audiences and using our multiple regression model to make informed predictions, Turtle Games can increase their chances of creating successful games and achieving greater financial success in the competitive video game industry.