

Research on How Products and Marketing Strategy Affects the Market Shares of Nike and Adidas

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ABSTRACT

For many children born in China, Nike and Adidas dominated the sportswear market during their childhoods and one of the reasons might be the lack of performance of China's local brands. How Nike and Adidas succeed in making positive progress while having cutthroat competition is a subject worthy of study. By applying the k-means model and a social experiment, this paper explores how products and marketing strategy affects the market shares by focusing on the marketing strategy, market share, product rating, and product price. The data for this research come from the data hub (data. world). The dataset assembled by Kash consists of three thousand two hundred and sixty-eight products from Nike and Adidas with twelve features of information, including their ratings, discount, sales price, listed price, product description, and the number of reviews [1]. According to the data and experiments, Nike seems to have more market share on more specific sports gears like football shoes, soccer shoes, and basketball shoes, whereas Adidas has more market share on jogging shoes, casual outdoor, and fashion collaboration shoes.

Keywords: Nike, Adidas, Rating, Reviews, Experiment.

1. INTRODUCTION

With the development and improvement of sportswear technology, Nike and Adidas, as the top competitors of the industry, have continuously evolved their products in order to maintain their leading position. For competitive sports athletes and regular people, Nike and Adidas seem to be their top choices. Hence, an inevitable problem for Nike and Adidas appears: the war of market share of the sportswear industry. Commonly, advertisements, the quality of products, and the brand spokesperson are always in consumers' concern. In the paper, a research was conducted to record 3268 products from Nike and Adidas with 12 features of information including their ratings, discount, sales price, listed price, product description, and the number of reviews. The research also consists of the marketing strategy for Nike and Adidas, including their market shares on specific sports, the popularity of their brand spokespeople, and the exposure rate on major sports leagues. These factors consist of the essential elements for customers to evaluate sportswear products. The research applied the method of market segmentation, such as k-means clustering to categorize customers. Based on the study, sportswear

companies can discover more precise marketing strategies or improvements to products.

2. DATA AND EVALUATING CRITERIA

2.1. Introduction to the sample data

This paper applies the open data found on Kaggle.com [1], a 12-column dataset that collects 3269 products from Nike and Adidas including their ratings, discount, sales price, listed price, product description, and the number of reviews.

2.2. Data processing

The first step was to divide the entire dataset into two parts according to 10 columns [2]. The first six columns contain the name of the product, the unique identification code of the product, the listing price for products, the price for which the product is sold, the discount provided on the product, and the belonging brand of the product. The latter four columns contain a description of each product, the product rating provided by users, the number of reviews provided on the product, and the last visit on the product by a customer.

As the author approaching such a large scale of data, he initialized the research by analyzing the number of products of each brand. Although the probe only consists of Nike and Adidas, the author specifically categorized Adidas into Adidas Sport Performance, Adidas Originals, and Adidas Core/Neo. In the following paper, the author listed the prices of each product by brand. The author checked the defaults in the listing prices section, and found out that 426 products had a listing price of 0. Therefore, deleting the missing field directly has little effect on the overall distribution of the data. In the evaluation section, the products with missing data were removed. Only the products with all the data that required were counted in the statistics. However, this can cause bias in the analysis part. Therefore, how to improve the accuracy of the result will be discussed in the limitation part. Finally, the data were processed through Python and Excel to reveal the customer preference.

2.3. Criteria for evaluating products

2.3.1. Sales volume & price of products

One of the most apparent differences between sportswear and luxuries is the sales volume. It is rather challenging for regular people to feel the "artistic sense" inside daily sportswear [9]. Hence, the public acceptability could also represent the accomplishment of products, which could be revealed by sales volume perfectly. Therefore, sales volume was the first thing to consider when the author was clustering the dataset. The author ranked the market performance of each product.

Price is one of the most critical reasons for customers' deliberation; a fair listing price would directly influence the market performance of products. The data include the listing prices of 2842 products (the listing prices of 426 products from Nike were missing) from Nike and Adidas. The author made a histogram below that directly shows the listing price of all available products.

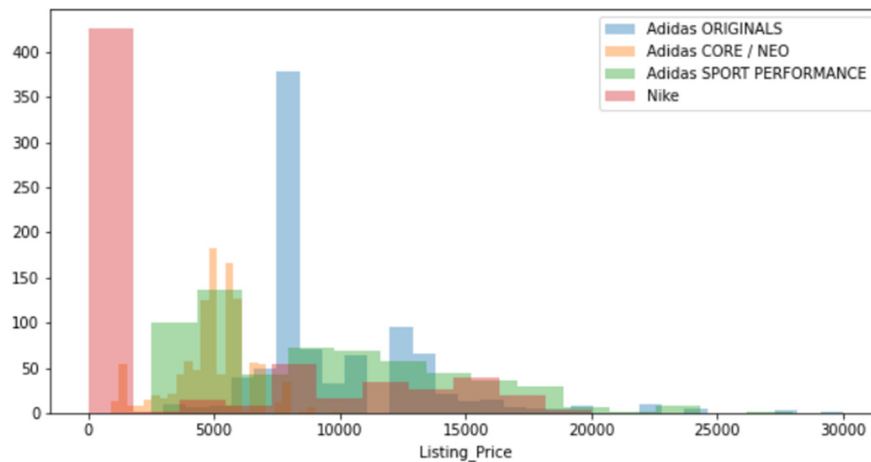


Figure 1 Histogram of listing price between Nike and Adidas

2.3.2 Rating & Reviews

In the sportswear industry, customers might not always accept advertisements. But they do trust product reviews. Customers recognize that different users may have different experiences of a product, so most customers will read multiple reviews, and trust the overall impression supplied by the reviews. By reading reviews, customers may seek to understand whether the product suits their particular situation.

In the research, the author made two separate histograms of product rating and product reviews. Figure 2 is the rating of all products including the products with no listing price and rating. The reason of showing the "unavailable products" [1] is to emphasize the extensive difference between Nike fans and other customers. The large portion of Nike products with 0-1 rating and 4-5 rating has evidently explained the author's purpose.

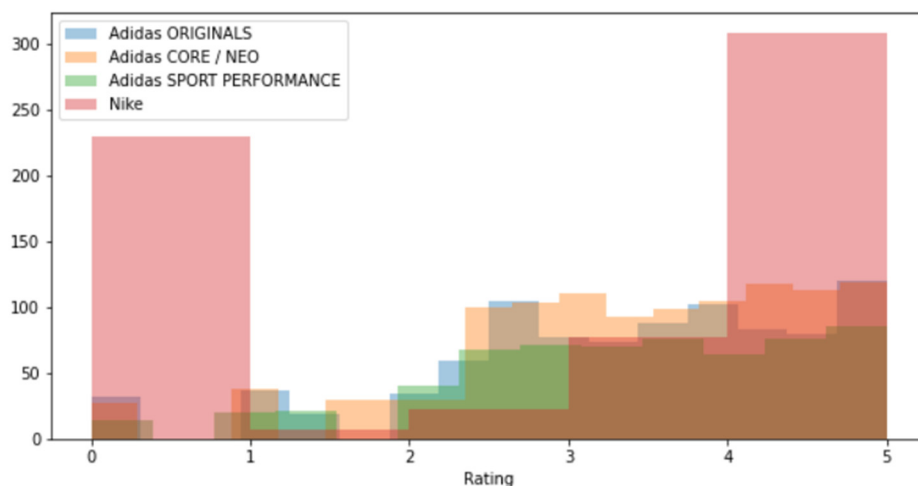


Figure 2 Products rating between Nike and Adidas

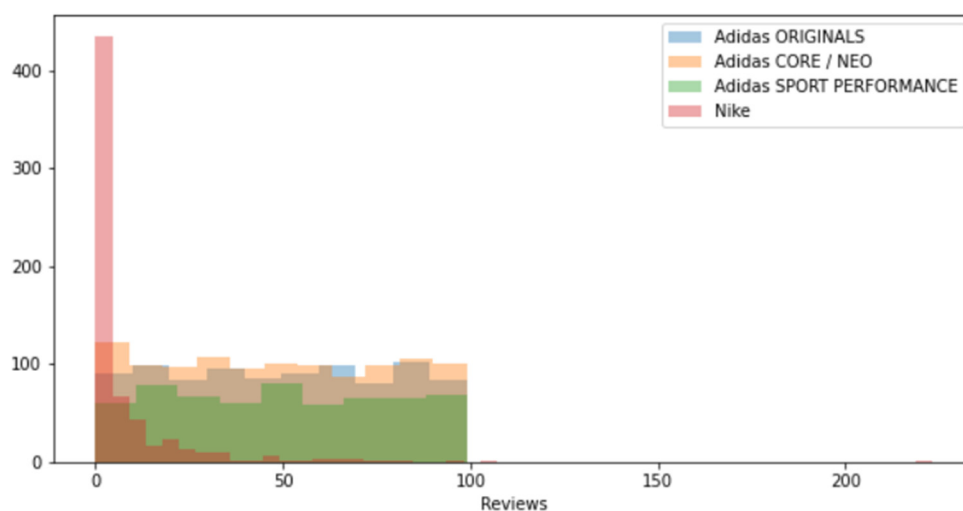


Figure 3 Number of reviews for Nike and Adidas

A lot of Nike products have no reviews, no listing price or rating. On the other hand, other products of Nike get high rating compared to Adidas products. It seems that there is big gap between Nike fans and those who are not[7].

3. METHODOLOGY AND RESULTS

3.1. Clustering

The author applied the k-means model to all the products.

Table 1. Cluster of products from Nike and Adidas

	cluster	Brand	Product_ID
0	0	Adidas CORE / NEO	70
1	0	Adidas ORIGINALS	658
2	0	Adidas SPORT PERFORMANCE	226
3	0	Nike	121
4	1	Nike	372
5	2	Adidas ORIGINALS	114
6	2	Adidas SPORT PERFORMANCE	117
7	2	Nike	74
8	3	Adidas CORE / NEO	1041
9	3	Adidas ORIGINALS	136
10	3	Adidas SPORT PERFORMANCE	263
11	3	Nike	76

Table 1 above demonstrates that the author clustered all products into four groups by their brand and Product ID. It is also clustered by the sales price of each product. The first cluster indicates the products with the sales prices; the second cluster represents the products with top rating; the third cluster indicates 200 products with the lowest sales price, and the last cluster represents the 200 products with the lowest rating.

3.2. Social experiment

Due to the uniqueness of sportswear, people around the globe may have different reviews for the same product. According to the research of Ales Jurca et al. [2], male and female Asian customers have significantly wider feet than European and North American customers who have very similar mean widths. On the other hand, European customers have significantly higher instep height than North American customers. This research proves that shoes with the same model might not satisfy all customers across the globe. Hence, in order to make the analysis more precise, a survey was conducted for local Chinese people.

The survey was randomly delivered to people in the local community. (Qingdao, China). There were 129 surveys in total; 50 of them were adopted in the research (25 males and 25 females). The survey is a simple FAQ that acquires participants to classify their gender information, age, occupation, length of time of doing sports per week, and their favorite running shoes, jogging

shoes, basketball shoes, soccer shoes, and sneakers (products should only be from Nike or Adidas).

The first step was to select available statistics. The qualification for submitted surveys was that all questions should be answered. With the only rubric applied, there were only 50 surveys left that were qualified for the research. The next step was to cluster the data. The entire fifty surveys were distributed into four clusters: males who spend more than 10 hours on sports per week (cluster 1), females who spend more than 10 hours on sports per week (cluster 2), males who spend less than 10 hours on sports per week (cluster 3), and females who spend less than 10 hours on sports per week (cluster 4). According to the result of the cluster, 11 males spend more than 10 hours on sports per week, 10 females spend more than 10 hours on sports per week, 15 males spend less than 10 hours on sports per week, and 14 females spend less than 10 hours on sports per week.

According to the result of the survey, for males and females who spent more than 10 hours on sports per week, 13 out of 21 of them chose the shoes from Nike as their favorite running shoes, and 6 of them chose "Nike Air Zoom Alphafly NEXT%" [3] as their favorite shoes, the price per pair of which is 275 dollars. For males and females who spent less than 10 hours on sports per week, 18 out of 29 of them chose the running shoes from Adidas. Twelve of the eighteen people chose "Adizero Boston" [4] as their favorite running shoes. For jogging shoes, 12 out of 21 males and females who spent more than 10

hours on sports per week chose the products from Adidas, and 8 of the 12 wrote "Adidas ultra-boost" [4] for this question. 16 out of 29 males and females who spent less than 10 hours on sports per week chose the products from Nike. For basketball shoes, 16 out of 21 males and females who spent more than 10 hours on sports per week chose the products from Nike. 20 out of 29 males and females who spent less than 10 hours on sports per week chose the products from Nike. This result might be affected by numbers of popular spokesmen from Nike. [6] Nike and Adidas got tie on sneakers section. Both of them have developed successful division that brought fashion into their brand. Air Jordan from Nike and Yeezy from Adidas each occupied half of the participants.

The final result of the small-scale survey illustrates that Nike seems to be more favored in specific areas of sports like marathon and basketball, whereas Adidas might be more attractive to amateurs or beginners with few foundations of doing sports [8].

4. LIMITATIONS

4.1. Data processing methods for the evaluation component of the dataset

In this paper, all the missing data were deleted for the convenience of processing, and only 3269 products with partial listing ratings and reviews were kept for analysis.

Deleting all missing data directly will reduce the sample size, resulting a deviation between the final result and the actual situation. In order to make the analysis more precise, the same number of products from Adidas may also be deleted in order to reach the equilibrium between two brands. Furthermore, the clustering method might not contain all the products. The missing products should be included into the analysis as well.

4.2. Scale of random survey

In the random-survey portion, the number of available participants may not be sizable enough to compose a proper survey. The best way to solve the problem is to make an online survey and publicize it through social media [10].

The reasons of the customers' choices are also important. It is the customers' review that could actually make a product better. The reasoning part may include several choices like comfort level, durability, outlook, spokesperson (celebrities), and advertisement. In that way, the survey will provide a more profound view of differences between products from Nike and Adidas.

5. CONCLUSION

This paper analyzes the differences between products from Nike and Adidas. According to the ranking which

was made in the research, the products from Nike have a higher average price than the products from Adidas. Combining it with the result from the survey, products from Nike may be more favorable for customers who have foundation on specific sports and willing to compensate money on sports, whereas Adidas may have a broader range of customers from amateurs to professional athletes.

In the future research, the rivalry between Nike and Adidas can be studied deeply. This should not be limited to the product itself, and the marketing strategies of Nike and Adidas should also be considered.

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