



Nottingham University
Business School

UNITED KINGDOM • CHINA • MALAYSIA

Coursework 2: Brand Analysis using Twitter

Target Brand: Nike

Comparison Brand: Adidas



Student ID: 20542740

ANALYTICS SPECIALIZATIONS & APPLICATIONS (BUSI4370 UNUK)
(SPR1 23-24)

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1.Executive Summary:

1.1 Task Description:

The task involved conducting a comprehensive analysis of Twitter data related to both the target brand Nike and its comparison brand Adidas. The objective was to uncover insights into prevalent topics, sentiment trends, and identify potential micro-influencers within the Nike Twitter community which will be a potential candidate for the next stage of the pilot, while also comparing these findings with the Adidas brand.

1.2 Technical Approach Summary:

The technical approach employed in this analysis encompassed rigorous data preprocessing, exploration, and analytical techniques to extract actionable insights from Twitter data pertaining to the Nike brand. Through meticulous text cleaning procedures, which involved eliminating special characters and stopwords, followed by an in-depth examination of key metrics and sentiment analysis utilizing the AFINN sentiment analyzer, prevalent themes and sentiment trends specific to Nike were identified. Employing topic modelling methodologies facilitated the discovery of dominant topics and associated keywords, providing valuable insights into Nike-centric discussions. Furthermore, comparative analyses with its primary competitor, Adidas, were conducted to benchmark strengths and areas for improvement, aiming to elucidate strategic opportunities for Nike brand by leveraging insights derived from the analysis. These findings offer a comprehensive understanding of consumer sentiments, emerging trends, and strategic opportunities for Nike, while also providing valuable insights into its competitive landscape through comparison with Adidas.

1.3 Data Summary:

The dataset comprised a collection of tweets mentioning the Nike brand within a specific date range (26th Feb 2023 to 2nd Mar 2023). It included information on the number of tweets obtained, the number of unique users analysed, and the geographical areas covered. In the data exploration and cleaning phase for the Nike dataset, it was observed that nearly one-third of the entries lacked location information, highlighting a substantial gap in geographical data. A meticulous examination of the dataset, comprising 3000 entries and 15 columns, unveiled crucial attributes such as author ID, tweet status count, verification status, and tweet text, among others. Furthermore, comprehensive summary statistics provided valuable insights into numerical variables, aiding in understanding the distribution and characteristics of the data. Similarly, for the Adidas dataset, 1257 entries were devoid of location details, emphasizing a similar data gap. With 2805 entries and 16 columns, including an extraneous 'Unnamed: 0' column, which was promptly removed for consistency, the Nike dataset underwent a rigorous exploration akin to its Adidas counterpart.

1.4 Results Summary:

Through the brand analysis, a potential micro-influencer for Nike who aligns well with the predefined criteria has been identified, exhibiting positive sentiments and high engagement metrics. Further analytical implementation unveiled that the topic of "Retail and Shopping" emerged as the most prominent, suggesting a significant focus on product releases, sales, and promotions within Nike-related tweets. Moreover, sentiment analysis revealed predominantly positive sentiments towards the Nike brand, underscoring its strong resonance with the Twitter community, refer figure 1. These findings substantiate the efficacy of the employed strategies in uncovering trending topics, identifying suitable micro-influencers, and comprehending sentiment dynamics within the Nike Twitter community.

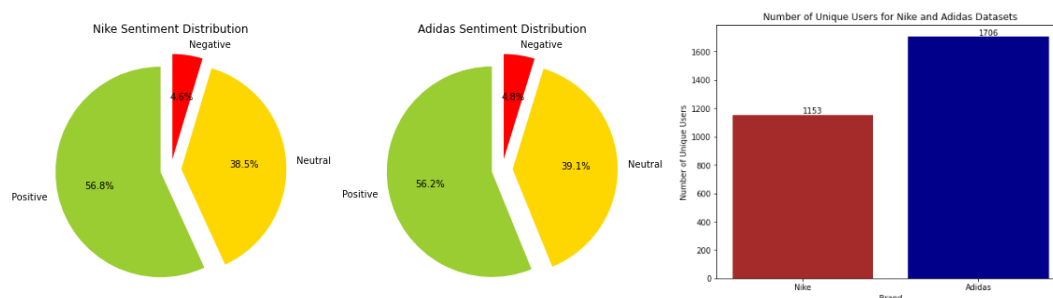


Figure 1: Sentiment Distribution and Number of unique users Nike Vs Adidas

1.5 Insights:

Insights were derived regarding the prevalent sentiments, topics of interest, and influential voices within the Nike Twitter community. The analysis highlighted key differences between Nike and Adidas in terms of average word count per tweet and brand mentions. Nike's tweets tended to be more detailed, but it has lesser number of mentions compared to Adidas, indicating lesser brand visibility. Also, Adidas outperformed Nike in terms of total engagement, including retweets, replies, and likes. This suggests a need for Nike to enhance its audience engagement strategies. Additionally, insights from Nike's promotional tweets (refer figure 2), shed light on its marketing initiatives, emphasizing the importance of understanding and optimizing promotional content to boost brand visibility and engagement through verified accounts. These exploratory data analysis insights can inform marketing strategies, brand perception management, and influencer engagement efforts.

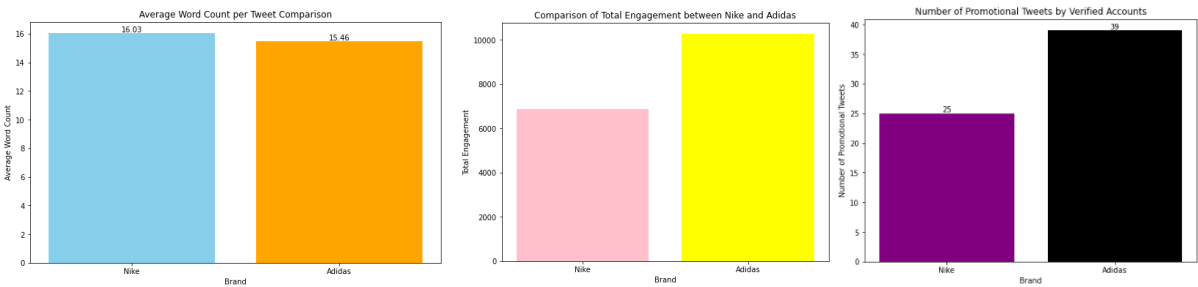


Figure 2: Insights for Nike Vs Adidas

2. Approach Breakdown:

The analysis commenced with the acquisition of a comprehensive dataset encompassing tweets referencing various brands, including Nike as the target brand and Adidas as its direct competitor. Crucial preprocessing steps were undertaken to ensure data cleanliness and suitability for analysis, involving tasks such as URL and special character removal, as well as text standardization through tokenization and lemmatization. Once the dataset was meticulously prepared, attention turned to uncovering prevalent themes and topics within tweets related specifically to Nike and Adidas. Employing Latent Dirichlet Allocation (LDA), an unsupervised learning technique, facilitated the identification of latent topics within the tweet corpus. This approach provided valuable insights into overarching narratives and discussions surrounding both brands, fostering a nuanced understanding of the Twitter conversation landscape tailored to Nike and Adidas. Following topic modelling, sentiment analysis was conducted to discern prevailing sentiment polarity towards Nike and Adidas among Twitter users. Utilizing sentiment analysis tools such as the AFINN sentiment analyzer, each tweet was assigned sentiment scores, shedding light on the overall sentiment climate surrounding the two brands, refer figure 3.

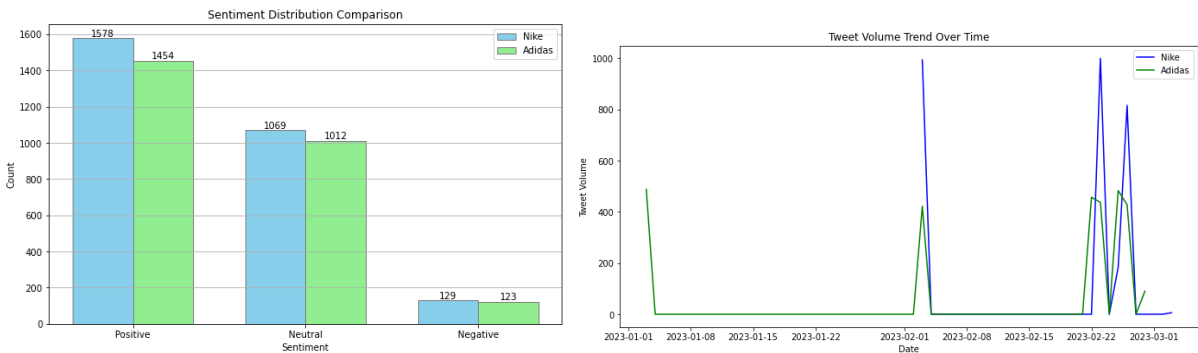


Figure 3: Sentiment Distribution and Tweet Volume Trend over Time for Nike Vs Adidas

Simultaneously, efforts were directed towards identifying potential micro-influencers capable of serving as valuable brand advocates for Nike. Through meticulous analysis of engagement metrics, sentiment trends, and relevance to Nike's target audience, individuals with the potential to amplify positive brand messaging were identified based on predefined criteria. This strategic approach aimed to leverage the influence of micro-influencers in nurturing brand affinity and engagement within the Twitter sphere, particularly for Nike, with a comparative lens on Adidas.

The insights gleaned from the analysis were vividly depicted through visually compelling visualizations, ranging from word clouds to sentiment distributions, refer figure 4. These visual aids provided stakeholders with actionable insights into prevailing topics, sentiments, and influential voices shaping the discourse surrounding Nike, and its competitor, Adidas, on Twitter.

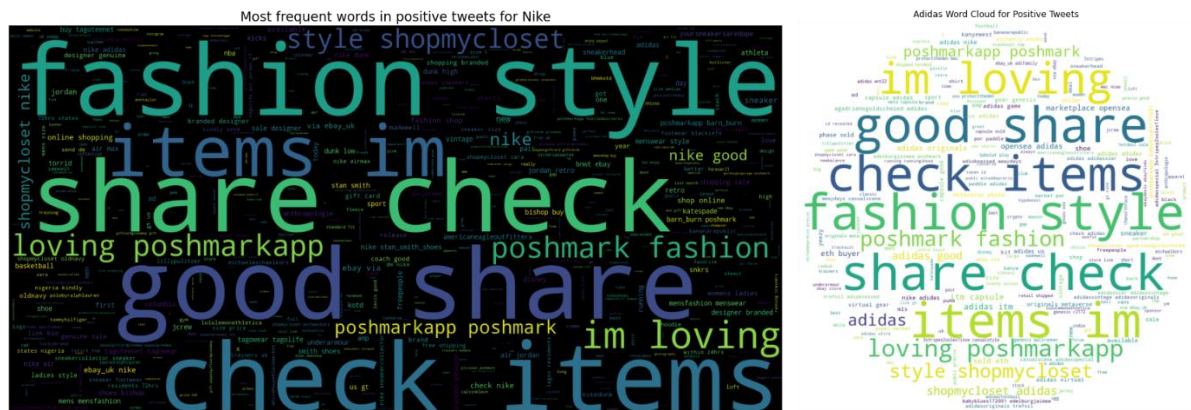


Figure 4: Positive words associated with Nike Vs Adidas

3. Data Description:

The datasets provide a comprehensive overview of the online conversation surrounding two prominent brands, Nike and Adidas. For Nike, the dataset includes 3000 tweets collected within a specified timeframe, originating from 1153 unique users. These tweets offer a diverse perspective on Nike-related discussions, spanning various geographical regions. Noteworthy mentions include 636 11th Avenue, New York, NY, among others, reflecting Nike's global presence and widespread popularity. Similarly, Adidas tweets reflect a global footprint, with key locations such as the United States and Herzogenaurach, Germany, contributing to the brand's online visibility. The dataset sheds light on user engagement patterns, with Nike tweets from 636 11th Avenue, New York, NY, dominating the conversation with 465 tweets. Additionally, a prolific user with the highest tweet count of 379 underscores significant engagement with Nike-related content.

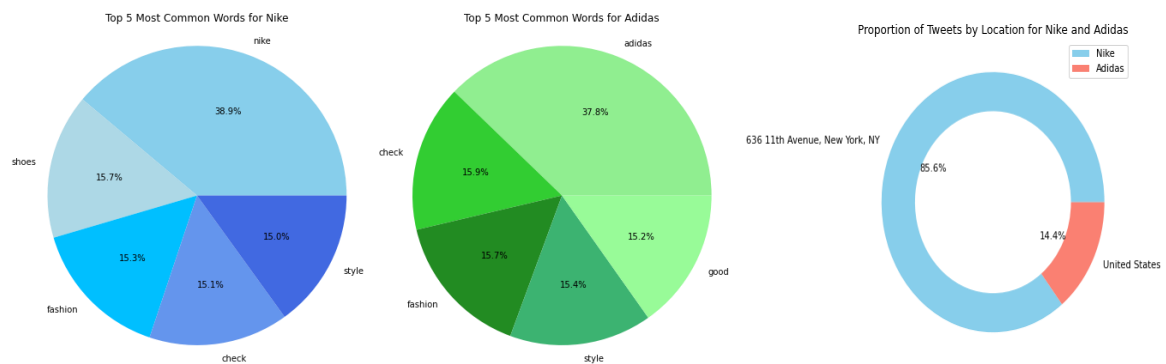


Figure 5: Most Common Words and Tweets by Location for Nike Vs Adidas

Furthermore, the dataset offers insights into hashtag usage, language distribution, and common words associated with Nike and Adidas. For Nike, prevalent hashtags such as #nike, #shoes, and #fashion underscore the brand's influence in the fashion and footwear domains. The analysis of the top tweets for each brand reveals predominantly positive sentiments, reflecting the brands' positive perception among Twitter users. The dataset provides a comprehensive overview of Nike and Adidas's online presence, encompassing user engagement, geographic distribution, and sentiment analysis, refer figure 5.

4. Nike Brand Analysis:

The analysis conducted provides a comprehensive examination of Nike, focusing on various analytical dimensions such as text analysis, sentiment analysis, topic modelling, and keyword analysis, refer figure 6. While Adidas is included for comparison purposes, the primary aim is to delve into Nike's online presence and consumer perceptions. By leveraging these analytical techniques, the study endeavours to offer a rich understanding of Nike's strengths and areas for improvement in comparison to Adidas. This approach enables a detailed exploration

of Nike's performance relative to a key competitor, facilitating strategic insights for enhancing brand perception, engagement strategies, and overall competitiveness in the market.



Figure 6: Word Cloud for Nike Vs Adidas

4.1 Text Analysis:

Nike and Adidas exhibit strikingly similar patterns in text analysis, showcasing comparable average word counts per tweet. Despite their similarities in average word counts per tweet, a closer examination of their top hashtags and frequently used words unveils subtle distinctions in their brand narratives and consumer engagement strategies. While both Nike and Adidas emphasize fashion, style, and product-centric discussions, their choice of hashtags and language usage reflects nuanced branding strategies tailored to resonate with their respective target audiences. Nike's top hashtags such as "poshmark," "fashion," and "style" suggest a focus on lifestyle and aspirational content, aligning with its reputation as a trendsetter in athletic and streetwear fashion. On the other hand, Adidas's top hashtags including "adidas," "ITM," and "Capsule" signify a blend of brand-centric promotion, exclusive releases, and collaborative ventures, highlighting its emphasis on innovation and curated experiences. Moreover, the utilization of the English language underscores both brands' efforts to maintain a global presence and connect with diverse audiences across international markets.

4.2 Comparative Analysis of Tweet activity over Location and Time:

This analysis unveils distinct patterns in the distribution of Nike and Adidas tweets, hinting at localized engagement strategies and audience preferences. While Nike's tweets emanate predominantly from urban centers in the United States, such as New York and Philadelphia, Adidas's tweets emanate from diverse global locations, including Germany and the United Kingdom, reflecting the brands' international footprint and localized marketing efforts. Based on the tweet activity over time, it appears that Nike generally maintains a higher level of engagement on most days, especially on February 3rd and 23rd. However, Adidas demonstrates a surge in tweet activity on specific dates such as February 25th and 26th, as well as March 1st.

4.3 Sentiment Analysis:

The sentiment analysis conducted on tweets related to Nike and Adidas reveals nuanced distributions, providing insights into consumer perceptions and emotional responses towards these brands. Nike exhibits a slightly higher proportion of positive sentiment tweets compared to Adidas, suggesting a stronger overall positive sentiment towards the Nike brand. Through this analysis, 1578 positive tweets, 1069 neutral and 129 negative tweets are identified for the target brand Nike, refer figure 7. Following the analytical process, the next step involves testing the accuracy of the sentiment analysis using logistic regression. This technique transforms the clean text into feature vectors, dividing the data into an 80% training set and a 20% test set. The resulting accuracy is 90.8% for Nike brand. Top tweets for Nike and Adidas predominantly reflect positive sentiment, indicating the brand's effectiveness in fostering favourable engagement and eliciting enthusiastic responses from its audience. These top tweets serve as potent indicators of brand affinity, highlighting the fervent excitement and loyalty of consumers towards both the brands. Nike's top tweets often revolve around anticipation for upcoming product launches, fashion trends, and brand collaborations, reflecting the brand's ability to captivate its audience through innovative marketing strategies and compelling storytelling. It also highlights areas where Adidas excels, such as in leveraging brand collaborations and promoting its performance-oriented products. Nike can draw inspiration from Adidas's success in these areas to enhance its own collaborations and emphasize the performance aspects of its products, thus further diversifying its appeal and potentially expanding its consumer base. The sentiment analysis

underscores the effectiveness of Nike in connecting with consumers on an emotional level, leveraging positive sentiment to strengthen brand perception and cultivate lasting relationships with its audience.

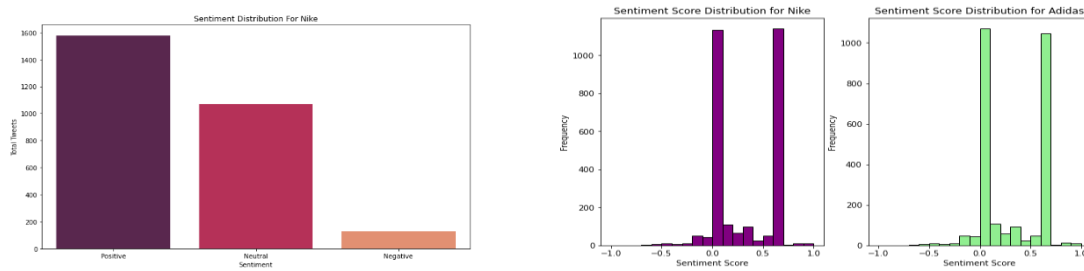


Figure 7: Sentiment Analysis

4.4 Topic Modelling:

This analytical approach allowed to discern prevalent topics within the discourse surrounding each brand on social media platforms. The resulting topics offer valuable insights into the nature of discussions and content related to Nike and Adidas, refer figure 8. For Nike, the topics identified are as follows:

- 1. Basketball Sneakers (Topic 0):** This topic encompasses discussions related to basketball culture, featuring keywords such as "basketball," "nba," "jordan," and "sneakers." It reflects the significant influence of basketball-related content within Nike's tweet data.
- 2. Streetwear and Fashion (Topic 1):** This topic revolves around trends in streetwear fashion, including mentions of brands like "offwhite" and discussions on design and style. It highlights the intersection of fashion and lifestyle in Nike's online discourse.
- 3. Retail and Shopping (Topic 2):** Tweets under this topic focus on retail activities and shopping experiences associated with Nike products. Keywords like "poshmark," "shop," and "online" suggest discussions around purchasing Nike merchandise and engaging with retail platforms.
- 4. Nike Products (Topic 3):** This topic centers on specific Nike products, such as "air," "jordan," and "sneakers," indicating conversations specifically about Nike's product lineup and releases.
- 5. Online Shopping Experience (Topic 4):** Discussions in this topic revolve around the online shopping experience for Nike products, with mentions of terms like "check," "shop," and "online." It reflects consumer interactions and experiences with Nike's online retail channels.

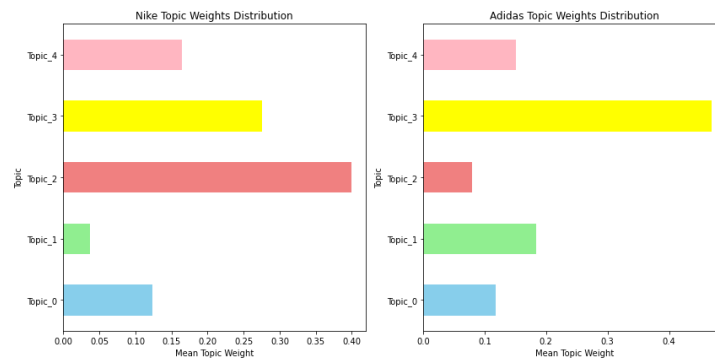


Figure 8: Topic Weights Distribution for Nike Vs Adidas

Analyzing the topics with the highest mean weight for each brand provides valuable insights into the prevailing themes in their respective tweet data. For Nike, topics such as "Retail and Shopping" and "Nike Products" emerge as significant areas of discussion, suggesting a strong emphasis on retail experiences and product trends. In comparison, Adidas showcases topics like "Adidas Football and Sportswear" and "Footwear and Collaboration" indicating a focus on sportswear products and collaboration strategies. By understanding these dominant topics, Nike can tailor its content creation, marketing campaigns, and audience engagement efforts to align with the prevailing interests and preferences of its target audience. Additionally, comparative analysis of the topics allows Nike to identify areas of strength and opportunities for improvement relative to Adidas, facilitating informed decision-making and strategic planning.

4.5 Keyword Analysis:

Keyword analysis provides additional insights into the language and themes prevalent in Nike and Adidas tweets. By identifying frequently used keywords and their contextual relevance, the analysis unveils underlying consumer interests and brand associations. Nike's keyword analysis highlights terms such as "shoes," "fashion," and "Nike," emphasizing the brand's focus on footwear and fashion-forward trends. Conversely, Adidas's keyword analysis showcases terms like "adidas," "check," and "fashion," reflecting the brand's emphasis on its identity and style. These keyword insights complement the text and topic analyses, enriching our understanding of the key drivers influencing consumer conversations and brand perception across social media platforms.

5. Micro-influencer Recommendation:

In the endeavour to identify a suitable micro-influencer for the Nike brand, a structured approach was adopted, guided by predefined criteria and assumptions. Initial screening involved the isolation of pertinent tweets containing predefined keywords associated with Nike, coupled with a discernible positive sentiment. Subsequently, individuals meeting specific thresholds, such as a minimum number of statuses and a substantial followers count exceeding 100,000, while also possessing a verified status, were earmarked as potential micro-influencers. Following this, candidates were ranked based on followers count and favourites count in a descending order, facilitating the identification of the top 5 prospective micro-influencers. Further scrutiny entailed an assessment of the sentiment conveyed within the content shared by these potential micro-influencers, leveraging polarity scores. These scores, indicating the degree of positive sentiment encapsulated within the users' content, facilitated a comparative analysis. Despite both candidates exhibiting positive polarity scores, one micro-influencer associated with author_id :22175551.0 demonstrated a notably higher polarity score compared to the alternative candidate represented by author_id :36427202.0, refer figure 9. In light of the sentiment analysis, the micro-influencer aligned with author_id :22175551.0 emerges as the preferred choice, bolstered by their elevated polarity score indicative of a stronger inclination towards disseminating content characterized by a positive sentiment. Thus, the recommendation for a micro-influencer for Nike underscores the significance of candidate selection based on predefined criteria, with author_id :22175551.0 emerging as the optimal choice in accordance with sentiment analysis.

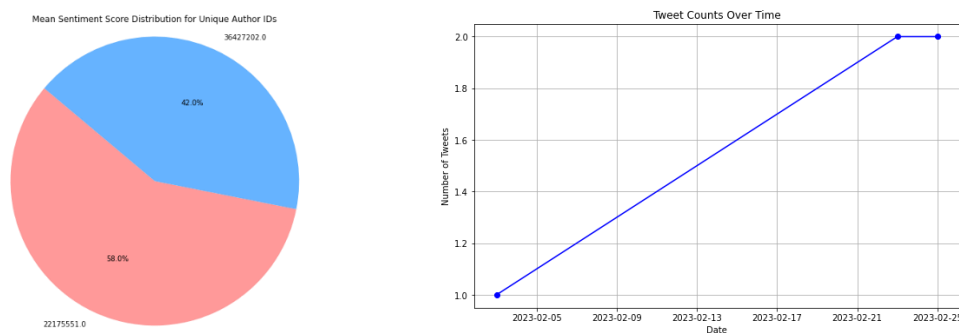


Figure 9: Potential Micro-influencer for Nike brand

5. Conclusion:

In conclusion, the analysis of Twitter data surrounding Nike has yielded valuable insights into prevalent topics, sentiment trends, and potential micro-influencers within the brand's Twitter community. Leveraging advanced analytical techniques, key areas of focus for Nike's marketing campaigns have been identified, sentiment dynamics have been highlighted, and influential users for brand amplification have been pinpointed. The comparison with Adidas has provided benchmarking insights, offering opportunities for Nike to learn from its competitor's strategies and performance. The selection of a micro-influencer aligns closely with Nike's brand values and target audience, promising to amplify the brand message effectively. Additionally, the analysis revealed that Nike has fewer promotional tweets by verified accounts compared to Adidas. Furthermore, while Nike exhibits lower total engagement metrics than Adidas, there are areas where Adidas excels, such as in total engagement, indicating areas for improvement for Nike's audience engagement strategies. Should the business decide to extend this pilot study into a full analysis, further exploration into real-time monitoring and engagement strategies is recommended. This expanded analysis could offer deeper insights into evolving trends, audience preferences, and competitive dynamics, enabling Nike to remain agile and proactive in its social media strategy. By implementing these recommendations, Nike can enhance its brand presence and customer engagement on Twitter, ultimately strengthening its position in the market.