



IS6051: BUSINESS DATA VISUALIZATION

INDIVIDUAL ASSIGNMENT

Way Finder Consultancy: Social Media Buzz for IPL 2021

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Executive Summary

Social Media can be potentially harnessed as a mine to collect data which can be used to analyze numerous trends like sentiment amongst the users, time when they are the most active, who are capable of influencing a large number of people, from where these users are using the platform and what are they using it for. Each of these aspects can prove beneficial when it is converted into an insight. The general trends can be analyzed which could be use to drive decision-making. Such data-driven decisions are often used to optimize operational and marketing costs, build a loyal customer base via personalization and in turn increase profits.

Way Finder Consultancy in this attempt has analyzed the social media buzz for and related to Indian Premier League (IPL), which is one of the biggest domestic T20 cricket leagues in the world. Apart from all the cricketing fiesta, IPL is a marketing paradise. It has successfully created an invaluable brand out of itself within a very short period of time. The aim of this report is to study and analyze different social media trends, which the IPL's marketing team can convert into actionable insights to devise a suitable marketing and advertising campaign for the brand-new IPL merchandise scheduled to launch during the current season.

For the periphery of this report, Way Finder Consultancy has used the social media platform of Twitter to extract tweets related to the 14th edition of IPL – IPL 2021 which is currently underway. A large enough dataset of sample tweets was extracted using R Programming techniques and then cleaned to exclude the redundant data and process the remaining data into a usable format. Further, Way Finder Consultancy designed 5 different KPIs from the sample tweets. In order to ensure that these KPIs and trends are communicated in such a way that it can be easily understood and utilized by all the IPL executives, an interactive dashboard was built using Tableau consisting of these 5 KPIs. A visual depiction of these trends provides clear insights in a best way possible. Going one-step further, with the help of its experience and expertise in this field, Way Finder Consultancy has provided recommendations based on every trend about how the marketing and advertising campaign strategies should be shaped in order to obtain maximum benefits.

This report apart from the introduction and the conclusions is divided into 2 main categories – Research Methodology, in which the process followed by Way Finder Consultancy to extract, prepare and analyze the Twitter data has been briefly explained and the main KPIs used to study the trends have been defined. The key findings analyzed from the sample tweets have been visualized and explained in the next section of this report, along with a few recommendations in order to make the most out of it.

Introduction

Indian Premier League (IPL) started in 2008 and within a span of merely 14 years has drastically emerged as a game changer in Cricket. The scale of success and popularity achieved by IPL in such a short time is truly astronomical; it has started competing with the popularity and excitement revolving around Bollywood blockbusters and its stars. Even the Indian Election Commission now has to consider and schedule the election dates in India with respect to the IPL calendar. In 2021, IPL has a valuation amounting to a whopping \$6.3 billion. [1]

Apart from all the celebrations, colours and grandiosity that IPL entails, it provides an amazing opportunity for digital marketing. Many brands line-up their entire products and marketing in and around IPL. Social Media plays a crucial role in strategizing marketing campaigns and targeting a specific audience to leverage for the same. Way Finder Consultancy, in this attempt has done a thorough study and analysis of trends based on Twitter data which can be beneficial for IPL Management Executives (the client) for decision-making with regards to marketing and advertising campaigns in order to maximize the sale of their exclusive merchandise.

Research Methodology

Identifying the Hashtag

Finding data relevant to any subject on Twitter is relatively simple using a hashtag. Thus, for this research, '#IPL2021' was used to gather the required tweets. The reason for choosing this particular hashtag was that this is the official hashtag of the IPL 2021 season which is currently underway and thus, it has been extensively used in every tweet related to the tournament. Every IPL franchise team has their own individual hashtags, however as they come under the umbrella of IPL itself, #IPL2021 is a more inclusive and suitable hashtag to use. It provided a large set of tweets from users all over the country which gave wider insights about the data.

Scraping the Tweets using R

An R library called 'twitterR' was used to access Twitter through its official API. Through a Twitter developer account, API keys were generated and using OAuth function, the access authentication was performed. Further, the chosen hashtag '#IPL2021' was passed through a searchTwitter function and the number of tweets was set to 10000 in order to ensure that a large enough dataset of sample tweets is retrieved. The tweets which were then stored were stripped of retweets to filter out redundant tweets and then they were stored into a dataframe.

In order to attain user information, lookupUsers function was used and the user names were then stored in a separate dataframe. The 2 dataframes were then merged together and then exported as a csv file.

```

1 # Creating authentication variables for Twitter API authentication
2 api_key <- 'ZlnoVvWFgBOCU1TaBqeXmGQVT'
3 api_secret_key <- '5tXR4AKwrZkdnea0uboaQ2r8Cd1h9LSxOd2Zew3IqnFjnDxXi'
4 access_token <- '2197831272-bj40R0SL8FJBK0VioJCTBobCYarwMeK27uUEkBZ'
5 access_token_secret <- 'Ncboxv4p4YRgRdXEyDnz9IE5hgoiNF0h5LGQ5Cd6A0kth'
6
7 #Loading the twitterR library
8 library(twitterR)
9
10 #Establishing Twitter connection via API
11 setup_twitter_oauth(api_key, api_secret_key, access_token, access_token_secret)
12
13 #Extracting tweets and storing them in a variable
14 tweets <- searchTwitter('#IPL2021', n=10000, lang = 'en')
15 summary(tweets)
16
17 #Stripping off the retweets
18 noretweets <- strip_retweets(tweets, strip_manual = TRUE)
19 summary(noretweets)
20
21 #Converting the stored tweets into a multi-purpose dataframe
22 tweetsdf <- twListToDF(noretweets)
23
24 #Obtaining user profile of the above tweets
25 userInfo <- lookupUsers(tweetsdf$screenName) # Batch Lookup of user info
26 userFrame <- twListToDF(userInfo) # Converting into another dataframe
27 summary(userFrame)
28 userFrame
29
30 #merging the tweet and user information dataframes
31 finalTweetsdf <- merge(tweetsdf, userFrame, by = "screenName")
32 finalTweetsdf
33
34 #Creating and writing into a csv file
35 write.csv(finalTweetsdf, "R_IPL2021.csv")

```

Image 1: R Code for extracting Twitter Data

Exclusion and Cleaning of Tweets

In order to render data actually useful for determining any insights and trends, it was necessary to get rid of any rows of tweets which did not bore any insightful value. For the user location, few rows had null values, some rows had the location based on a particular city in India and few other rows had an international location. Thus, the null rows were removed at first. Then for the rows which had individual city names were aggregated using the name of the state. This was necessary in order to analyze the trends based on entire states rather than cities which were much smaller entities and very high in number. Further, rows with international locations were excluded as the marketing campaign of IPL would be concentrated only within the country. Finally, after exclusion of the redundant and unwanted tweets, a dataset containing 1816 sample tweets was used for further analysis and visualization.

Trends Visualization

Tableau has been used to visualize the data which has been collected and processed. Using Tableau, interactive dashboards can be built comprehensively. The

processed csv file was imported into Tableau and then actionable visuals were created by plotting particular columns against one another in such a way that it provides certain trends and insights.

Key Performance Indicators (KPIs) Used

- **Location-based Activity:** A bar-graph was used to plot the number of tweets done from different locations. The graph was then sorted in a descending order and colour-coded from a dark to a light shade in order to facilitate easy eye-balling of the data visualization.
- **Source of Tweets:** A pie-chart was used to illustrate the different device sources from which tweets were done so as to mould the marketing and advertising strategies.
- **Activity Peak Times:** A line-graph was used to demonstrate the times when the twitter activity related to #IPL2021 was at the peak. 2 different variable parameters were used: number of tweets and retweets.
- **Top Influencers:** 2 bar-graphs were plotted on each other which helped to determine the users which could potentially be used as influencers to endorse the IPL merchandise.
- **Gender-based Activity:** A pie-chart was used to compare the number of tweets done by males and females to analyze whether there are significant number of IPL fans in either gender.

Key Findings

IPL Twitter Activity Trends Dashboard



Image 2: IPL Twitter Activity Trends Dashboard

The interactive dashboard in the above image depicts 5 different trends related to the activity on Twitter regarding the current season of the Indian Premier League (IPL). The first trend on the top-left contains a line-graph which shows the peak activity times on Twitter for '#IPL2021', the bottom-left trend is a bar-graph which shows the number of tweets based from different locations which are Indian states in this case. The trend in the middle of the dashboard is again a bar-graph demonstrating the users who could potentially be utilized as influencers because of their high Twitter reach based on the number of likes on their tweets. Trend in the top-right part of the dashboard contains a pie-chart which shows the most common source devices used for tweeting while the trend in the bottom left is also a pie-chart showing the tweet distribution based on user genders.

Location-based Activity

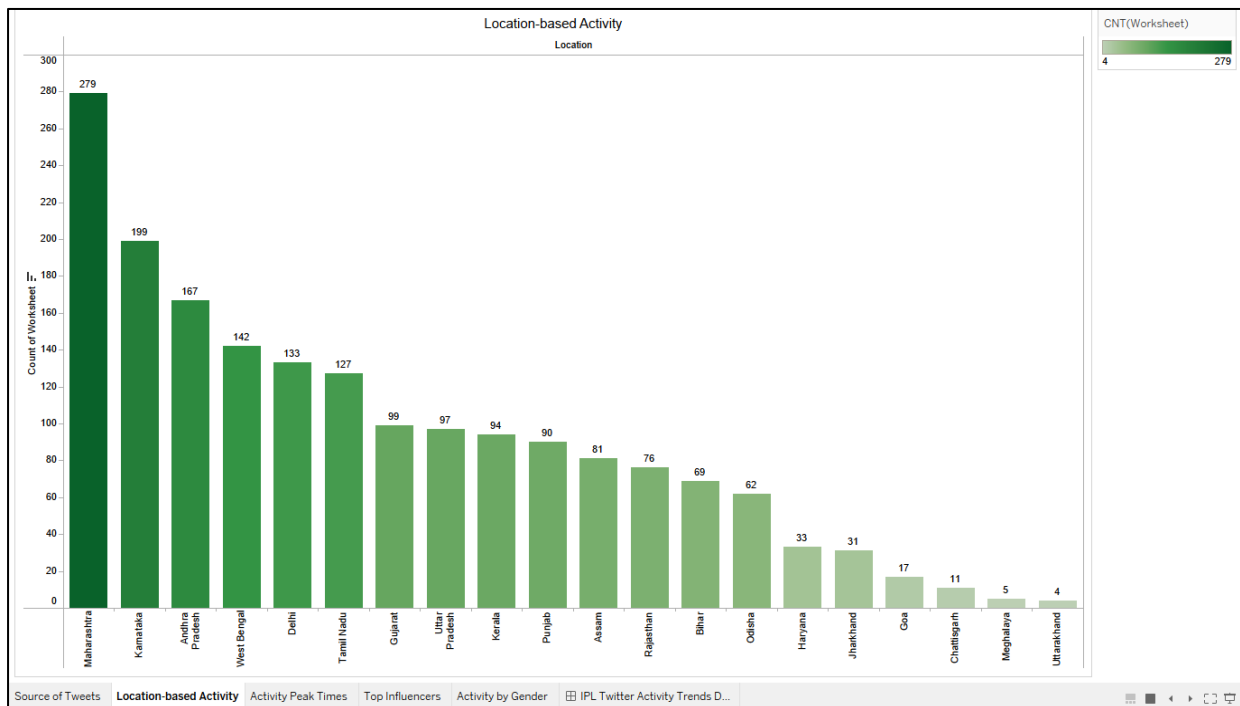


Image 3: Bar-graph – Location Based Activity

As it is widely evident from the above graph, the highest number of tweets were made from the state of Maharashtra with 279 tweets, followed by Karnataka with 199 tweets, Andhra Pradesh with 167 tweets, West Bengal with 142 tweets, Delhi with 133 tweets, Tamil Nadu with 127 tweets and so on. The number of tweets from the individual states can be translated into the ratio of social media activity, overall following and viewership of IPL in those particular states.

Recommendations

As in India, every state in itself is like a different country because of the linguistic and cultural diversity, it is recommended to consider and value it while designing a marketing strategy for the sale of the planned merchandise. Thus, if IPL's marketing team is planning to create advertisements, they should consider creating them in different languages especially in the languages of the states where the activity is high. While planning the merchandise line-up, distinguished qualities of different states should be considered. This way, a personalized touch could be given to the marketing of these merchandise which would attract a lot of customers from these particular states.

Source of Tweets

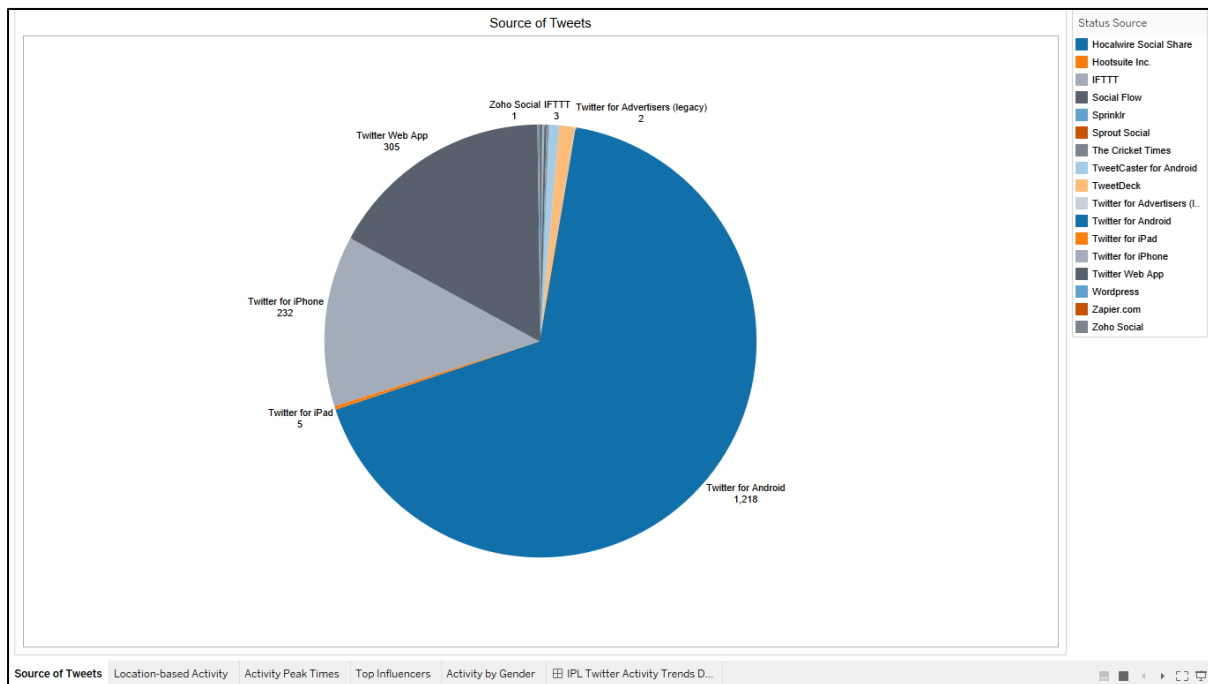


Image 4: Pie-chart – Source of Tweets

It can be clearly determined from the above pie-chart that most of the users who are active on social media like Twitter, about 67% of users use the Twitter platform from Android phones, followed by 13% using iPhones and 17% using Twitter WebApp from desktops or laptops.

Recommendations

Based on the insights about the source devices which are being used by the active users, it can be deduced that a vast majority uses Android phones. Thus, marketing strategy can be shaped accordingly targeting this section of people. In Android phones and iPhones, advertise placement is done using through third-party developments like Google Ads while using various applications, or through video streaming platforms like YouTube or Hotstar which is already the official live streaming partner of IPL.

Activity Peak Times

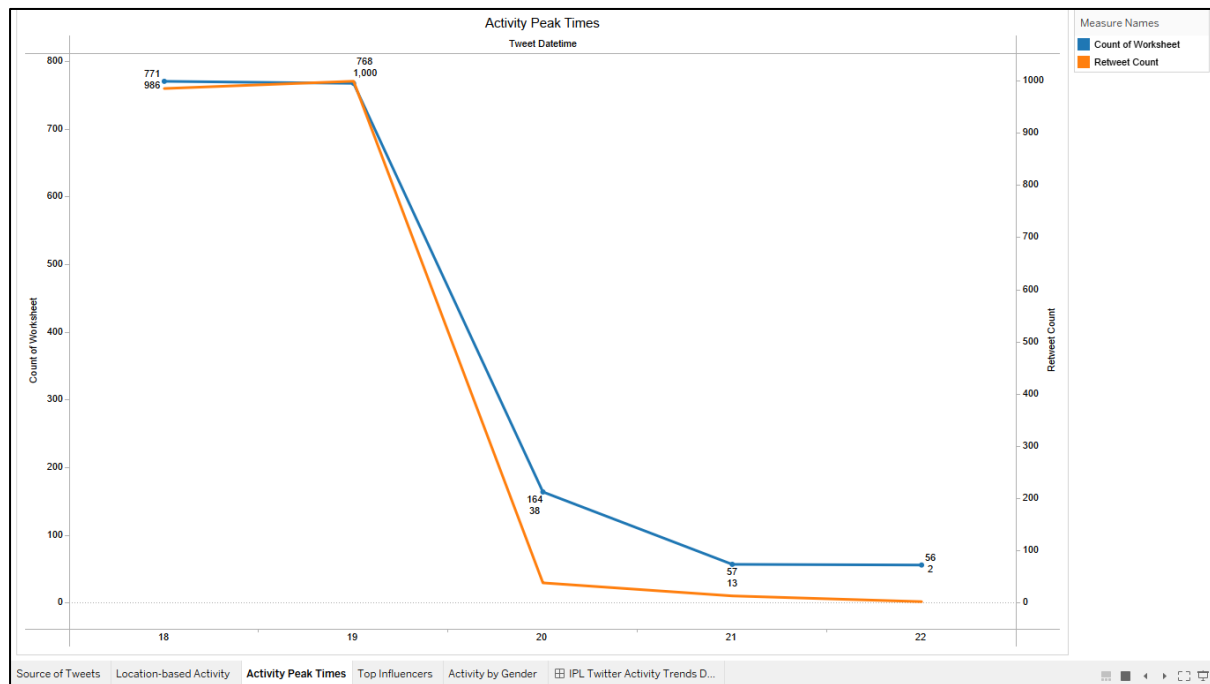


Image 5: Line-graph – Activity Peak Times

The above line graph depicts the number of tweets (on y-axis) done during particular hours (x-axis). It can be seen more than 1500 tweets from the sample of 1816 tweets were done from 6 PM to 7.15 PM. This means that, during this time the activity on social media was at its peak with a maximum number of users active. However, after around 7.15 PM, the activity drops drastically indicating very low active users.

Recommendations

6 PM to 7.15 PM is usually the time before the day's cricket match starts. This is when the excitement builds up among the people which reflects on the high activity during this time. This is the time when experts and pundits discuss and share their match previews and other users tend to retweet them. The high number of retweeting activity can also be evidently seen in the above image. When the time during which the social media activity is at its peak, social media marketing can be used to target the high number of active users during this time. Once the match starts at 7.30, people are more hooked up to their television or live streaming to watch the match rather than being active on social media. During this time, the marketing and advertising of merchandise should be concentrated through broadcasting and video streaming channels.

Top Influencers

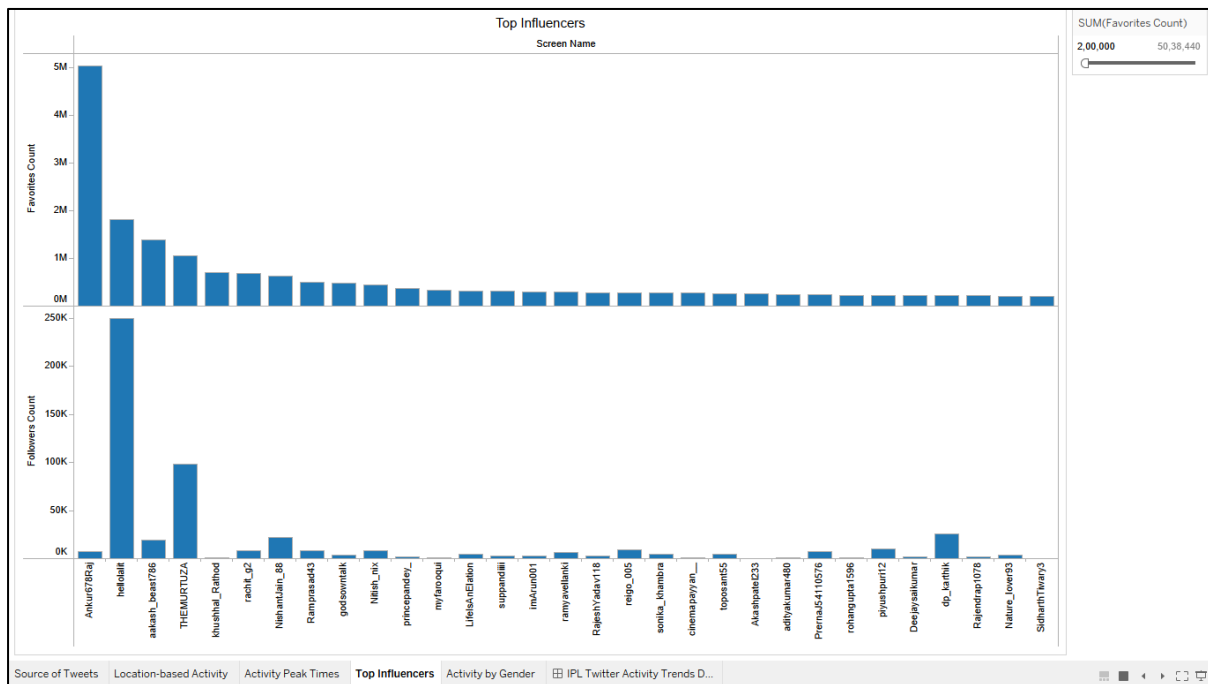


Image 6: Bar-graphs – Top Influencers

The above bar graph shows two distinct but related entities one above the other. The favourites count, i.e., the number of likes a tweet received and the count of followers of that user is plotted on the y-axis while the username is plotted on the x-axis. All the users which are plotted on x-axis are filtered with the condition such that they have at least 2 million likes on their tweets. It can be seen that the user 'Ankur678Raj' has a very high Twitter reach with more than 5 million likes on his tweets, followed by user 'hellolalit' with close to 2 million likes and then few other users with more or less 1 million likes.

Recommendations

Influencer culture is a lot trending these days where people with a high social media reach, who are often called as 'Public Figures' are used for advertising and marketing by many brands. Such people who have a large audience following them on social media platforms are capable of appealing and influencing them to buy and use the products that they are endorsing. Similarly, for marketing of the IPL merchandise, such Twitter influencers who have millions liking their content can be effectively utilized.

Activity by Gender

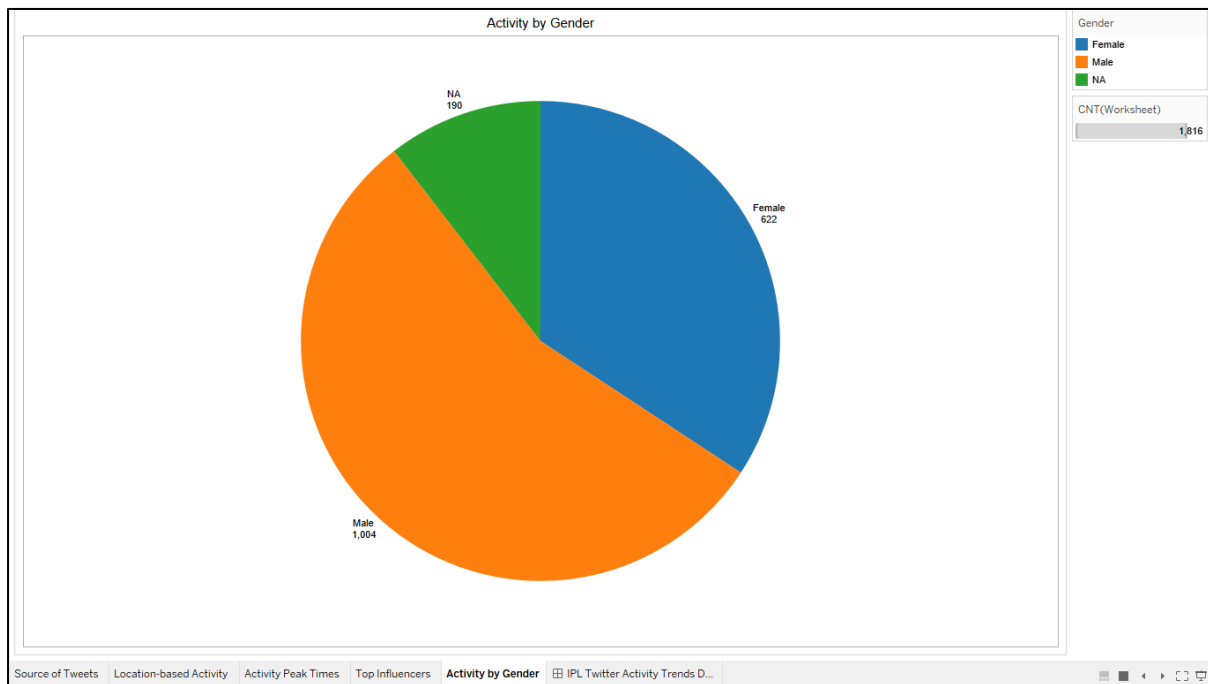


Image 7: Pie-chart – Activity by Gender

It was observed from the findings that 1004 out of 1816 sample tweets in regards to IPL 2021 were done by males. However, it was surprising to see that the number of tweets done by females was 622. Thus, it proves that the number of female cricket fans in India is considerably significant.

Recommendations

It is recommended that during designing the merchandise and marketing it, IPL executives need to break the old stereotype which said women are not much into sports. Even though the number of female fans is lower than their male counterparts as seen in the above part, it is significant enough to be considered. The merchandise should be designed in ways which could cater both males as well as females. This would in turn increase sales and maximize profits.

Conclusion

Indian Premier League (IPL) has a huge potential for digital marketing. Social media activity tends to surge during such massive events which in turn provides data which could be strategically collected and analyzed to determine the trends. IPL executives should study and analyze these trends and convert them into actionable insights in order to drive decision-making related to marketing and advertising of IPL's brand new merchandize in order to optimize the overall marketing costs by targeting particular audiences in particular times and effectively increasing sales and profits.

Way Finder Consultancy has thus, analyzed Twitter activity using the hashtag '#IPL2021' and has devised 5 distinct KPIs, has built an interactive dashboard providing insights about these KPIs. IPL executives should thus focus on creating a marketing campaign which would have a tinge of personalization for people belonging to different states and thus, different cultural background. Android, iPhone and Desktop/Laptop users are the most common Twitter users and thus, advertisements can be redirected through different applications or via streaming or broadcasting platforms. For this advertising however, IPL executives should consider the peak and low times of Twitter and social media activity as a whole and determine when the advertisements should be concentrated via social media platforms and broadcasting/streaming services. Social Media Influencers could be an effective way of reaching to a wider number of users. And finally, it would be beneficial to design any merchandise keeping in mind the likes of both men and women cricket fans.

Way Finder Consultancy strongly believes in the power of data-driven decision making and thus would be happy to offer its experience and expertise for the same in the future.

References

1. Anonymous. (2018). IPL: "The real game changer". (Online). Available at: <https://brandequity.economictimes.indiatimes.com/news/business-of-brands/ipl-the-real-game-changer/65409449> [Accessed on 10th April, 2021]