



# ANALYSIS OF DISNEYLAND VISITOR REVIEWS

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# Executive Summary

Our client, Disneyland, is interested in identifying visitors' sentiments, issues and interests after visitors made their trips to Disneyland theme parks at multiple locations along with the present statistics and trends of visitors in three different theme parks such that the management can act on insights and create a fulfilling experience for visitors all while improving the business profitability. This report provides insights from the analysis and evaluation of 42000 reviews posted by visitors for different Disneyland theme parks regarding visitors' sentiments, concerns and interests. Various methods of analysis, such as text analysis using a machine learning approach and lexicon-based approach, topic modelling, visualisations, etc., are employed to obtain an understanding of visitors' sentiments and concerns towards different theme parks at various locations. The use of machine learning and lexicon-based approach to analyse texts would offer a glance at how visitors at theme parks are responding to services and facilities offered at their respective theme parks. Likewise, visual graphs would offer a holistic view of trends, major traveller groups and theme parks' ratings from the large volume of data.

Results from the data analysis show that the peak month for Disneyland Hongkong, Disneyland California and Disneyland Paris is December, July and August respectively as seen in fig 1.a.1 to 1.a.8 for Hongkong, fig 1.b.4 to 1.b.9 excluding 1.b.7 and 1.b.8 for California, and fig 1.c.1 to 1.c.9 for Paris. The top visitors for Disneyland Paris, Hongkong and California are from the United Kingdom (7992), Australia (1636) and the United States (12339) respectively as seen in fig 2.a, fig 2.b and fig 2.c. In terms of highest ratings, Disneyland California received the highest proportion of 5-star ratings (64.51%) as seen in fig 3 and table 1. Disneyland California received the highest positive reviews and Disneyland Paris received the lowest positive reviews as seen in fig 4. On the other hand, from fig 5 it is observed that Disneyland Paris received the highest negative reviews and Disneyland Hongkong received the lowest negative reviews.

The report discovers that the current position of Disneyland theme parks in California is positive, and the theme park in Paris is getting many negative reviews from visitors. Disneyland Hongkong is operating better than Disneyland Paris but can improve to catch Disneyland California in terms of positive reviews. Recommendations to improve park profitability include:

- Continue catering to major visitor groups and develop promotions to attract visitors from potential visitor groups such as Indian visitors in Disneyland Paris and Disneyland California as seen in fig 2.a and fig 2.c.
- Address the concerns and interests of major visitor groups especially family experience as this topic is discussed heavily by all major groups of visitors and in general as well which can be seen in fig 11 and fig 12.
- For Disneyland California, the current state of crowdedness and adventurous tasks available should be inspected since this topic is of high importance to American visitors who make up over 12000 population out of the total Disneyland California visitor population as seen in fig 12.
- For Disneyland Hongkong, ticketing issues with points of attraction should be inspected and amended as seen in fig 11.
- For Disneyland Paris, eatery and staff services should be given the first priority in the step to improve this park's rating since these topics are discussed heavily by its visitors as seen in fig 11.

# Data Exploration and Analysis Findings

## Peak Time for Hongkong

From fig 1.a.1 to 1.a.8, all the years from 2010 to 2017, it is seen that December is the peak month in which a large number of travellers visited that theme park. Only in 2018 (fig 1.a.9), the visitor population in April overtook the visitor population in December by a few margins. Thus, it can be said that December is the peak month. From the visualisations created for Disneyland Hongkong, a trend can be seen clearly. There was a rise in population from September to October and a fall in November, finally reaching a peak in December. This helps in establishing that the peak period starts from October to December, and only in 2018 (fig 1.a.9), this trend is not evident as we do not have data for those months in 2019.

## Peak Time for California

Line charts displayed in figures from fig 1.b.1 to fig 1.b.3, it can be seen that December is the peak month while after 2012, the peak month shifted to July except for 2016 and 2017 where the peak can be seen in October and April respectively as shown in fig 1.b.7 and fig 1.b.8. Even in 2016 and 2017, the visitor counts in July was not low and somewhat comparable to the peaks. So, it can be said that July is the peak month for Disneyland California after 2012. Similarly, May to August can be considered as the peak period since we can see from the above graphs that in almost all years from 2013 afterwards (fig 1.b.4 to 1.b.9), the visitor counts started to rise in a fast pace from May to August and fell from August onwards.

## Peak Time for Paris

From fig 1.c.1 to fig 1.c.9, apart from 2010, in all the years from 2011 to 2018, the peak is found in the month of August. Similarly, from fig 1.c.2 it is seen that from 2011 the theme park visitor population began to rise rapidly from June till August and showed a sharp decline from August. Only in 2012, 2016 and 2018, did the visitor population fall by a small margin from June to July and climbed again in August as shown in fig 1.c.3, fig 1.c.7 and fig 1.c.9. For all other years, except for 2010, the population growth continued from June to August. Thus, June to August is considered the peak period for Disneyland Paris.

## Major Groups of Visitors

From the chart, fig 2.a, for Disneyland Paris, the visitors from the United Kingdom, United States and Australia form the major visitor groups at 7992, 1331 and 595 respectively with United Kingdom citizens being the top visitor for Disneyland Paris. From fig 2.b, it is seen that for Disneyland Hongkong, Australian citizens are the top visitor group with a population count of 1636 followed by other major visitor groups from other countries, such as India, Philippines, United States, Singapore and United Kingdom at 1083, 991, 881, 852 and 740 respectively. Similarly, from fig 2.c, it is observed that, for Disneyland California, visitors from the United States are the top visitors contributing a huge figure of 12339 to the total visitor

population at that theme park. Similarly, other major groups are formed by people from Australia (2448), Canada (1842) and the United Kingdom (1049).

## Theme Park with Highest Ratings

From fig 3 and table 1, it is seen that Disneyland theme park in California received the highest rating as 64.51% of its visitor population gave a 5-star rating. Disneyland Hongkong accumulated 46.95% of 5-star ratings, and Disneyland Paris received 44.83% of 5-star ratings from their total visitor population.

## Visitors' Sentiments towards Theme Park Aspects.

Comparing both positive and negative reviews for all selected aspects, it is found that there is a low proportion of negative reviews compared to positive ones. From fig 6 and 7, it can be seen that Disneyland Paris has more negative reviews and fewer positive reviews than both Disneyland Hongkong and Disneyland California. Both Hongkong and California had low positive reviews for 'hotel' and zero negative reviews for that aspect. 'Park' and 'Ride' facilities are highly rated by most visitors from Disneyland Hongkong and California and only a few visitors from those theme parks rated negatively to those aspects. Disneyland California seems to struggle with 'hotel' and their other services represented by 'service' as these aspects have low positive reviews. On the other hand, these aspects also got low negative reviews from Disneyland California visitors. This pattern is true for Disneyland Hongkong as well. From this analysis, it is found that visitors in Disneyland Paris are unsatisfied most compared to Disneyland California and Disneyland Hongkong.

## Overall Concerns and Interests among Visitors

From the word clouds (fig 10), the overall concerns and interests of visitors summarised from the six topics are:

Topic 1: Action of staff members regarding ticketing.

Topic 2: Worthiness of food and service offered at eateries, restaurants and hotels.

Topic 3: The crowdedness and adventurous tasks in the theme park.

Topic 4: Ticketing issues related to points of attraction such as fireworks, Mickey Mouse, etc.

Topic 5: Overall experience of the family and children.

## Concerns and Interests of Visitors among Different Parks

The concerns and interests vary among different theme parks. Visitors at Disneyland California discussed much about crowdedness and adventurous tasks which is topic 3. While for Hongkong and Paris, this topic was not discussed too much. For Disneyland Hongkong visitors, ticketing issues related to points of attraction became the most discussed topic (topic 4). Regarding Disneyland Paris, visitors were concerned about the eatery services (topic 2) and staff members' actions (topic 1) the most. Visitors at all three theme parks displayed much concern for the family and children's experience (topic 5). On the other hand,

the only topic which is not discussed much by the visitors from Disneyland California and Disneyland Paris is ticketing issues related to points of attraction (topic 4).

## Concerns and Interests of Major Visiting Groups.

Regarding topics discussed by different major groups of visitors, visitors from the United States and Canada showed much concern about the crowdedness and adventurous tasks of the theme park (topic 3). Visitors from India discussed a lot about ticketing issues associated with points of attraction (topic 4) while this topic was not highlighted more by American and Canadian visitors. The top 2 topics discussed by United Kingdom citizens are staff action (topic 1) and eatery services (topic 2). On the other hand, American, Indian and Canadian visitors were not much interested in eatery services (topic 2). It seems that Australian citizens had much to say regarding children and family experiences (topic 5). This topic has also been given much importance by the other four groups of major visitors. Lastly, Australian visitors gave a fair amount of importance to other topics i.e., from topic 1 to topic 4.

## Practical Implications

Based on the analysis results, the following recommendations have been made for the management team:

1. The responses received by Disneyland Paris are not satisfactory compared to other theme parks in all five aspects, park, show, hotel, ride and service. This is the main reason why Disneyland Paris received many 1-star ratings and fewer 5-star ratings compared to the other two theme parks. Also, the positive reviews are low and negative reviews are high for Disneyland Paris. The course of action that the management team should take first is to look closely at the staff and eatery services and ways to improve the children and family experience in Paris. If there is any issue in those areas, then they should rectify it as soon as possible since many visitors at Disneyland Paris were concerned with these topics, especially its major visitors (British, Australian and Canadian visitors). After completing this, they can move to other topics in order of importance i.e., crowdedness and ticketing issues to improve the positive reviews on all aspects.
2. Disneyland California performed best than the other two parks. It received many 5-star ratings and fewer 1-star ratings. The proportion of positive reviews is also high. However, the proportion of negative reviews is higher than Disneyland Hongkong. To reduce the negative reviews, management should improve the 'park' and 'ride' facilities at the park as these two aspects received a high proportion of negative reviews. Crowdedness is the most discussed topic by its visitors, and management should analyse this area and take possible steps to manage visitor crowds as this area also falls under the most discussed topics by two of its four major visitors i.e., American and Canadian. Lastly, management should also focus on improving the family experience at Disneyland California since it is the second-highest discussed topic by its visitors including its other two major visitor groups (Australian and British).
3. Disneyland Hongkong is operating better than Disneyland in Paris but can improve to reach the level of California. Similar to Disneyland California, the 'park' and 'ride' aspects should be improved to reduce the negative ratings from visitors. The one thing that Disneyland Hongkong

should improve more than Disneyland California is the 'show' aspect. This way, Disneyland Hongkong can come closer to Disneyland California in terms of positive ratings. Regarding the much-discussed topics, ticketing issues related to points of attraction gathered a lot of visitors' attention at Disneyland Hongkong. Management should identify the negative aspects of that area. Furthermore, management should consider ways to improve the experience of children and families at Disneyland Hongkong. Taking care of these two aspects would also address the concerns of its two major visitor groups (Australian and Indian).

Finally, taking the suggested steps above would effectively help in fulfilling the visitors' expectations from the theme parks and increasing the revenues for the parks. If possible, it is better to complete the above steps before the next year's peak season for each theme park i.e., October to December for Disneyland Hongkong, May to August for Disneyland California and June to August for Disneyland Paris.

## Appendix

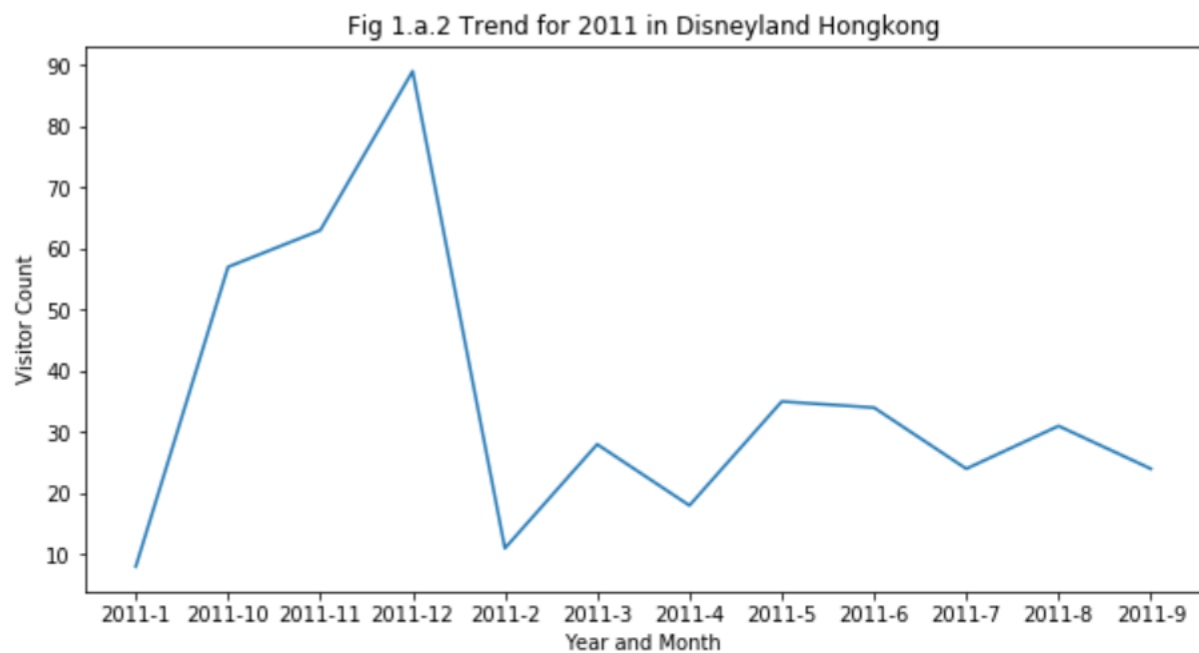
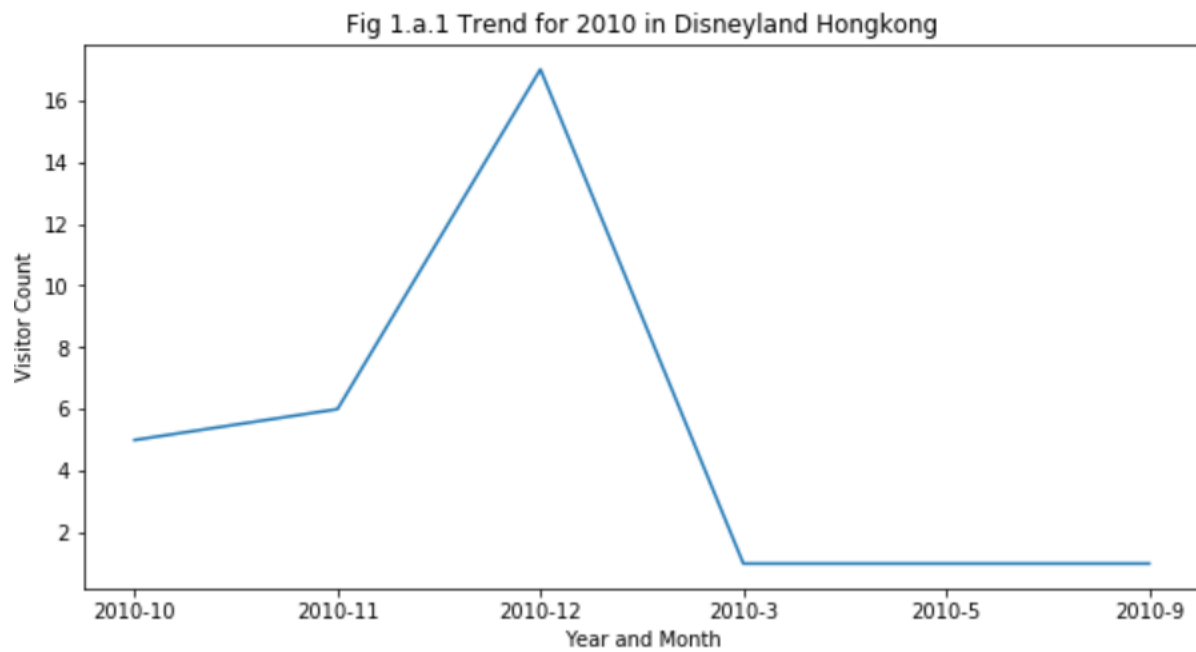




Fig 1.a.3 Trend for 2012 in Disneyland Hongkong

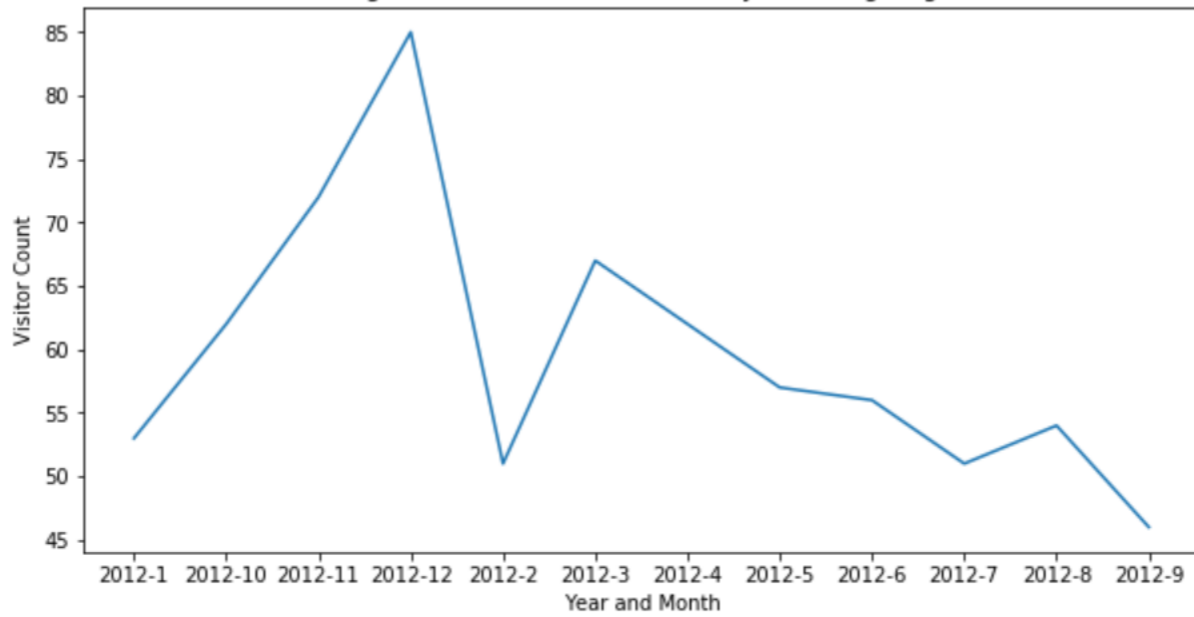


Fig 1.a.4 Trend for 2013 in Disneyland Hongkong



Fig 1.a.5 Trend for 2014 in Disneyland Hongkong

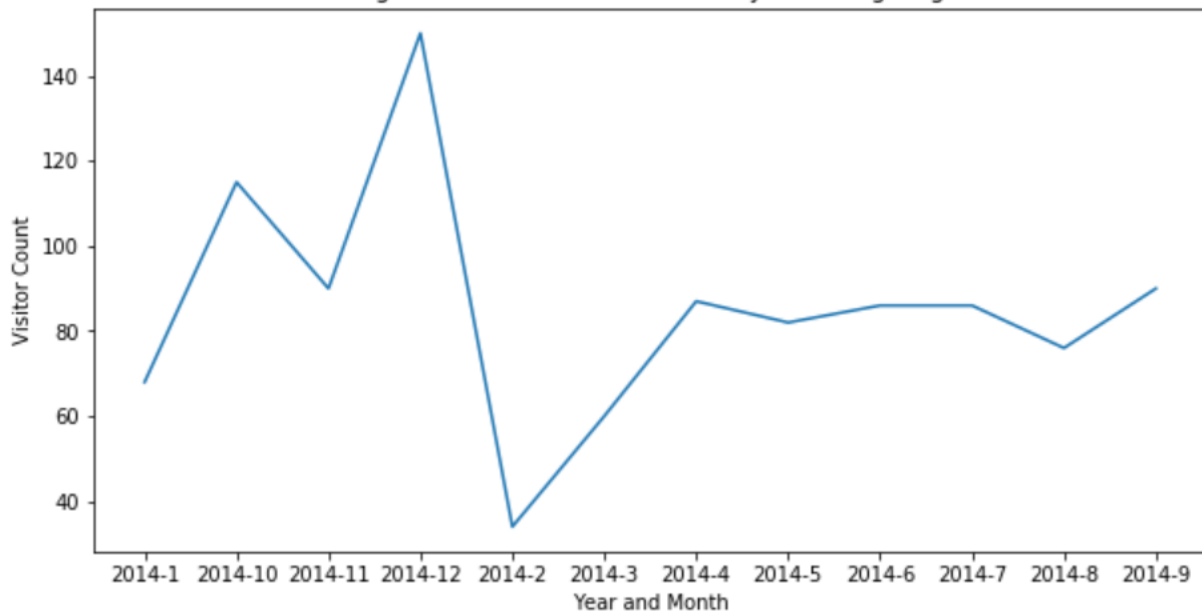


Fig 1.a.6 Trend for 2015 in Disneyland Hongkong

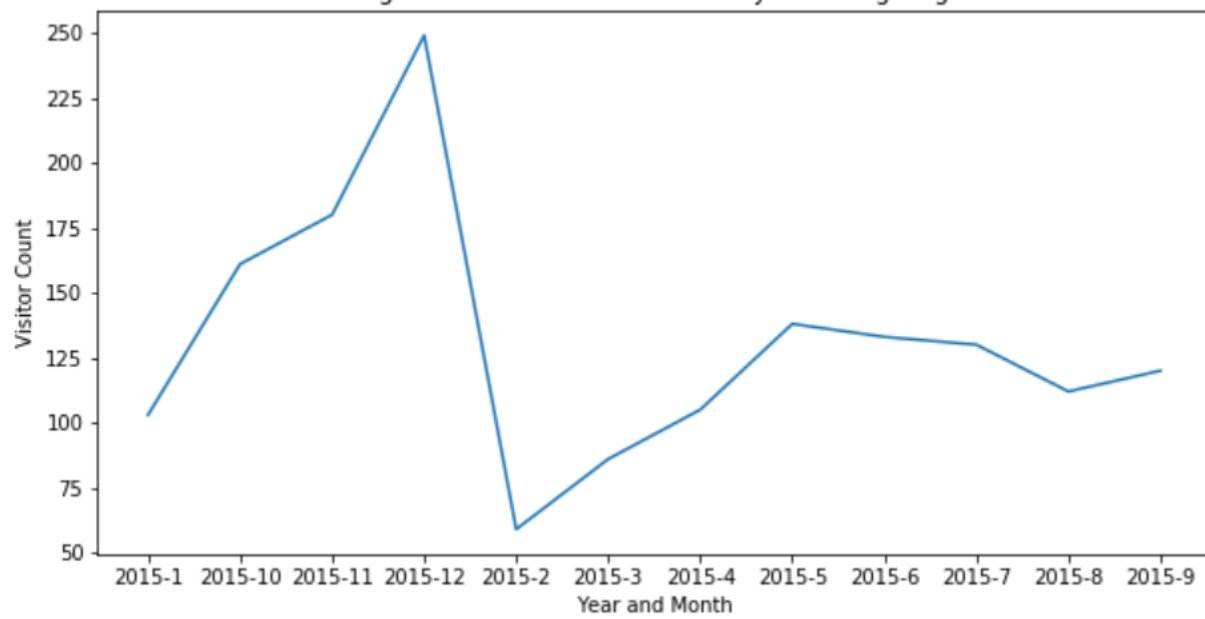


Fig 1.a.7 Trend for 2016 in Disneyland Hongkong

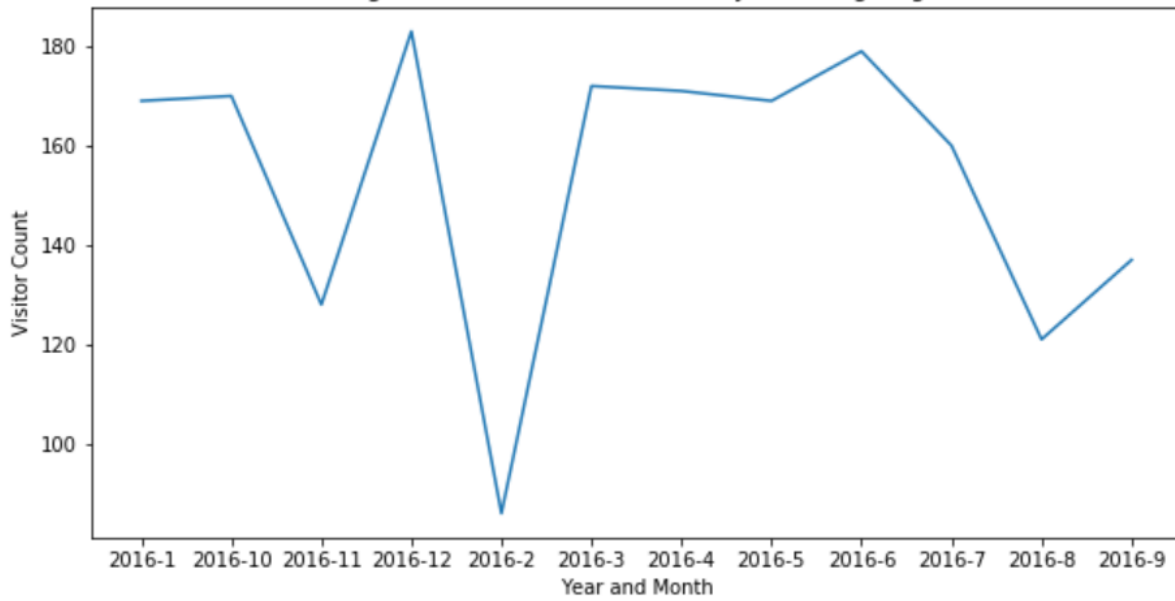


Fig 1.a.8 Trend for 2017 in Disneyland Hongkong

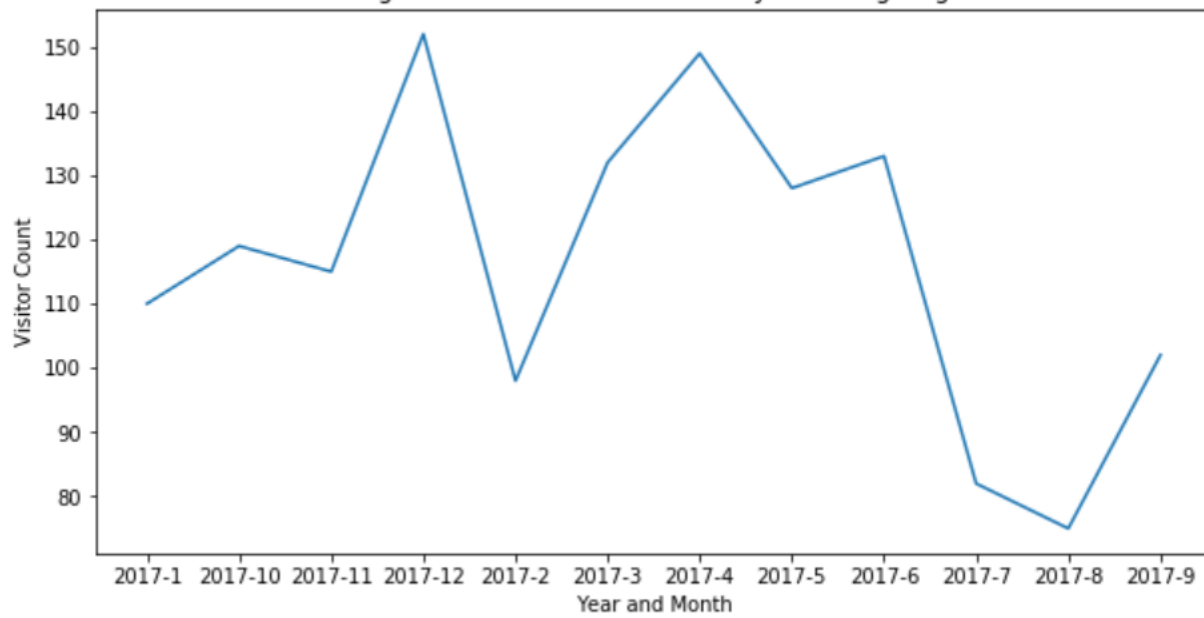


Fig 1.a.9 Trend for 2018 in Disneyland Hongkong



Fig 1.a.10 Trend for 2019 in Disneyland Hongkong

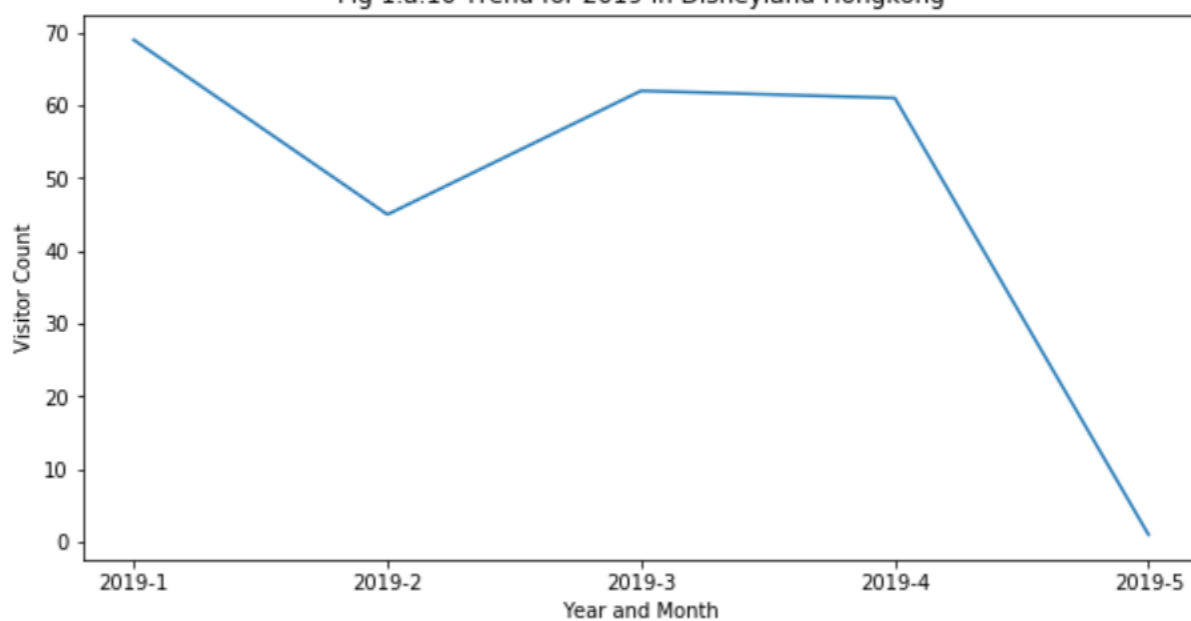


Fig 1.b.1 Trend for 2010 in Disneyland California

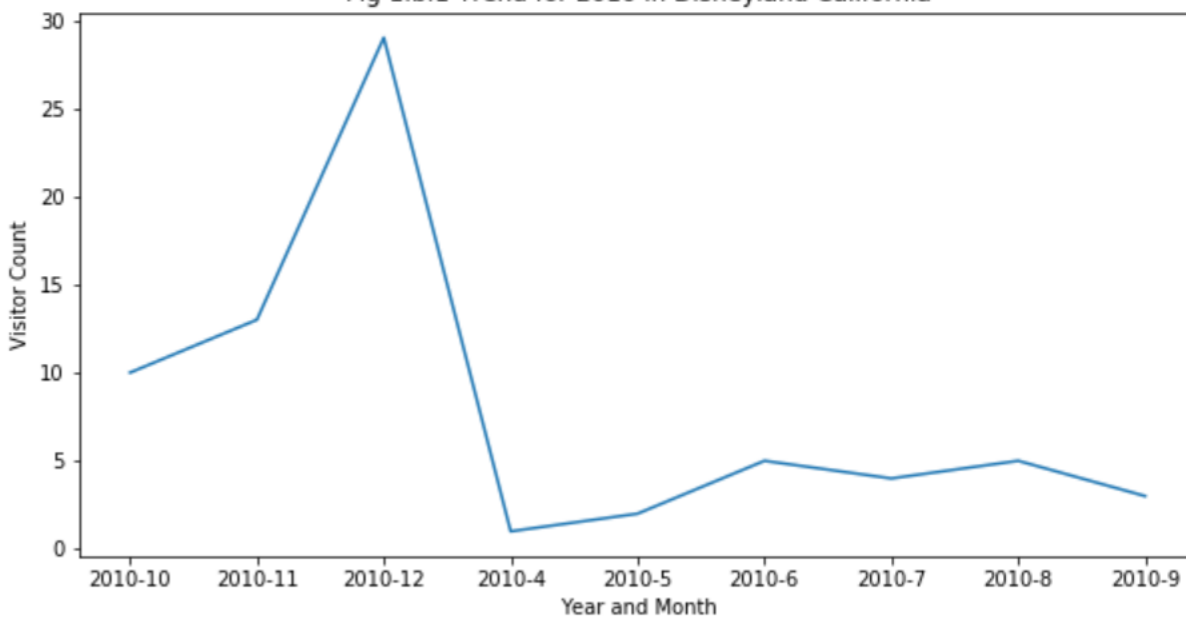


Fig 1.b.2 Trend for 2011 in Disneyland California

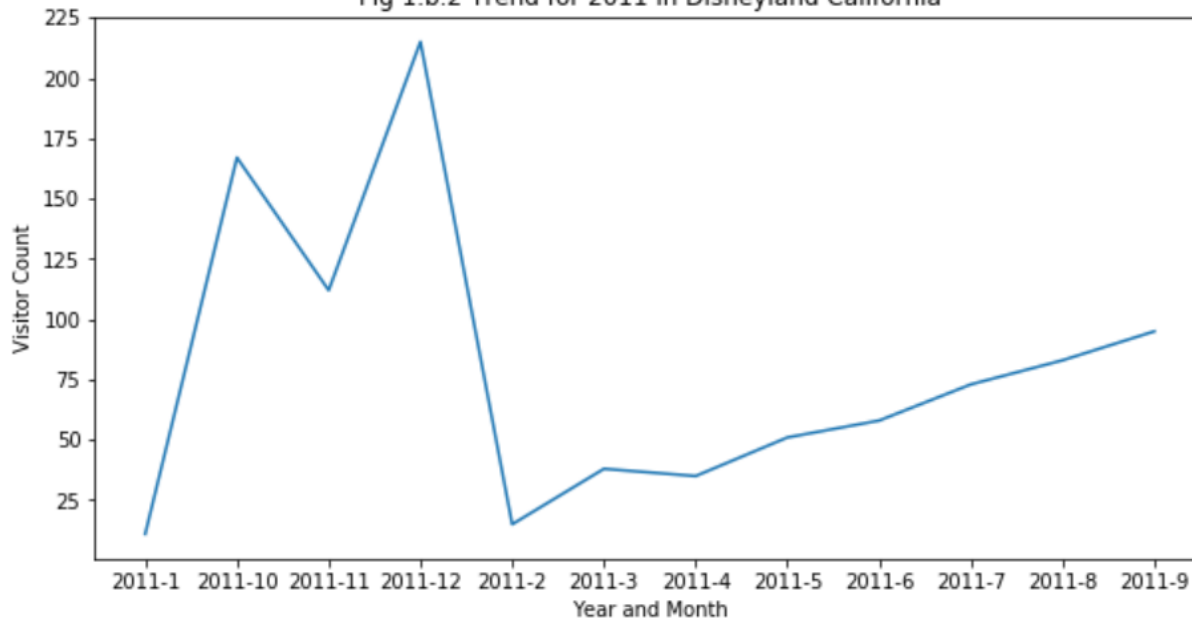


Fig 1.b.3 Trend for 2012 in Disneyland California



Fig 1.b.4 Trend for 2013 in Disneyland California

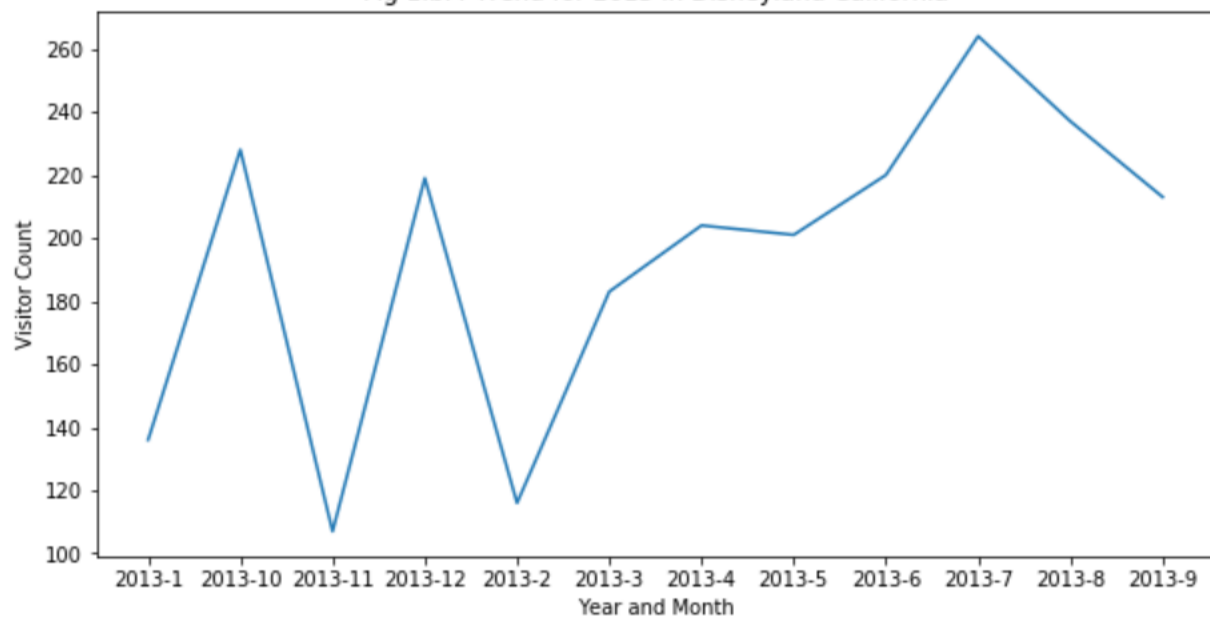


Fig 1.b.5 Trend for 2014 in Disneyland California

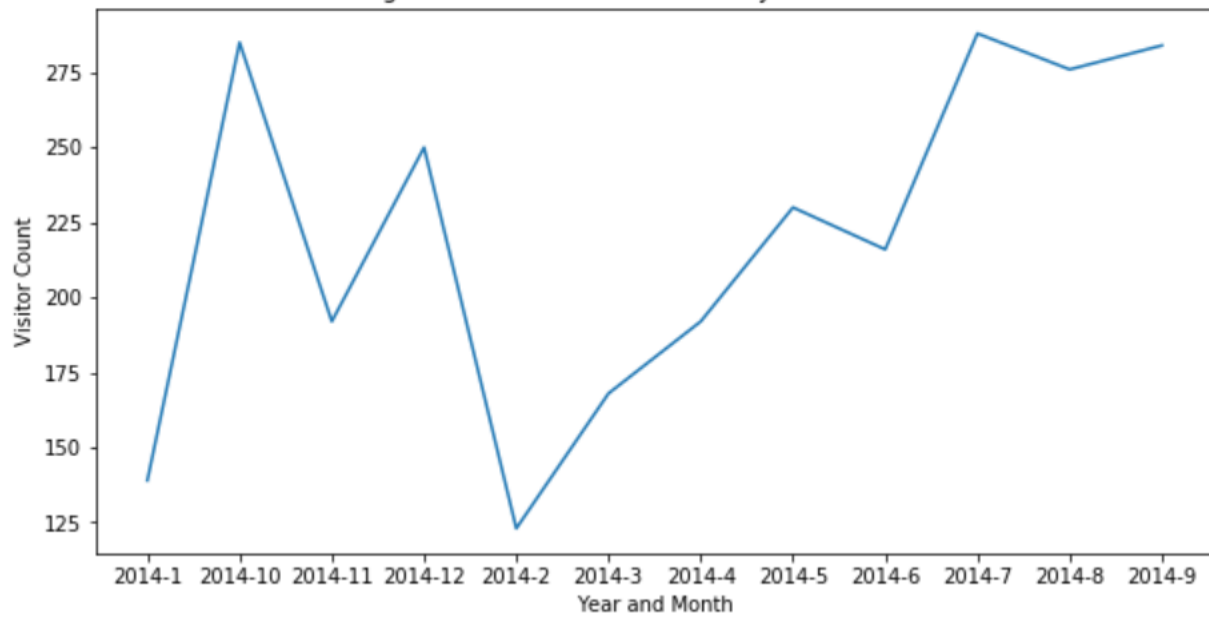


Fig 1.b.6 Trend for 2015 in Disneyland California

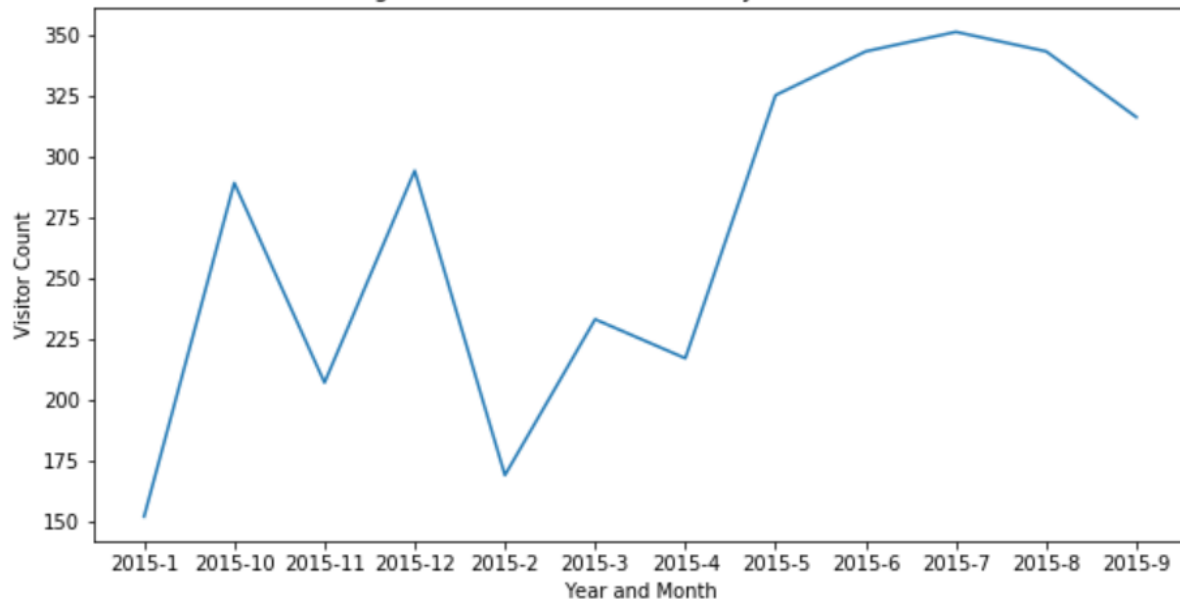


Fig 1.b.7 Trend for 2016 in Disneyland California

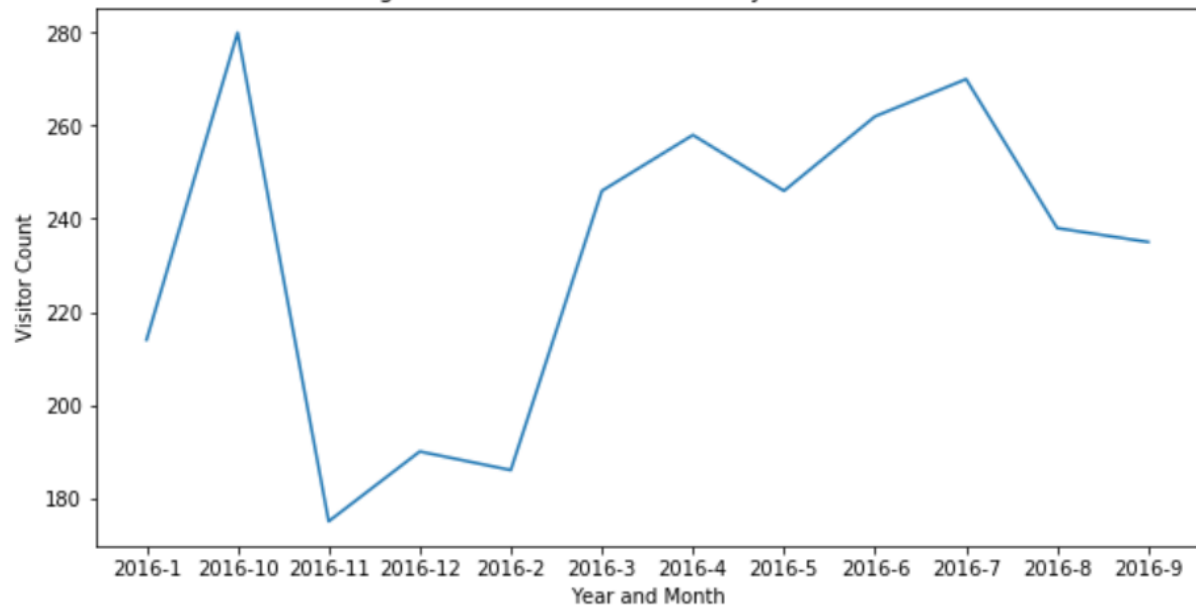


Fig 1.b.8 Trend for 2017 in Disneyland California





Fig 1.b.9 Trend for 2018 in Disneyland California

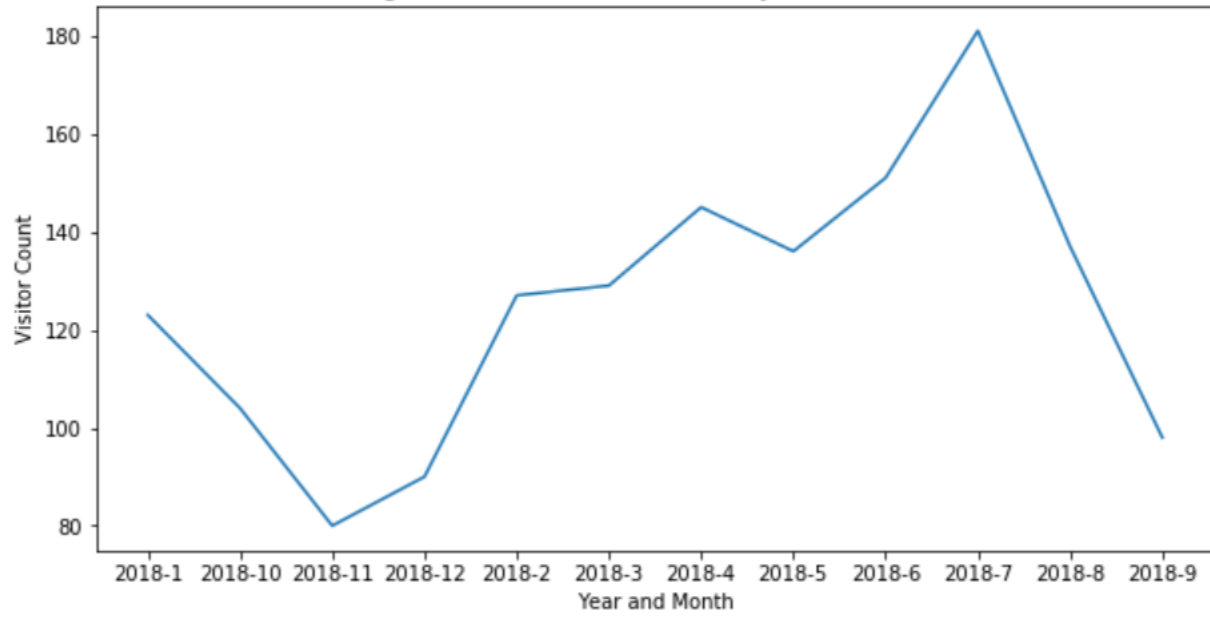


Fig 1.b.10 Trend for 2019 in Disneyland California

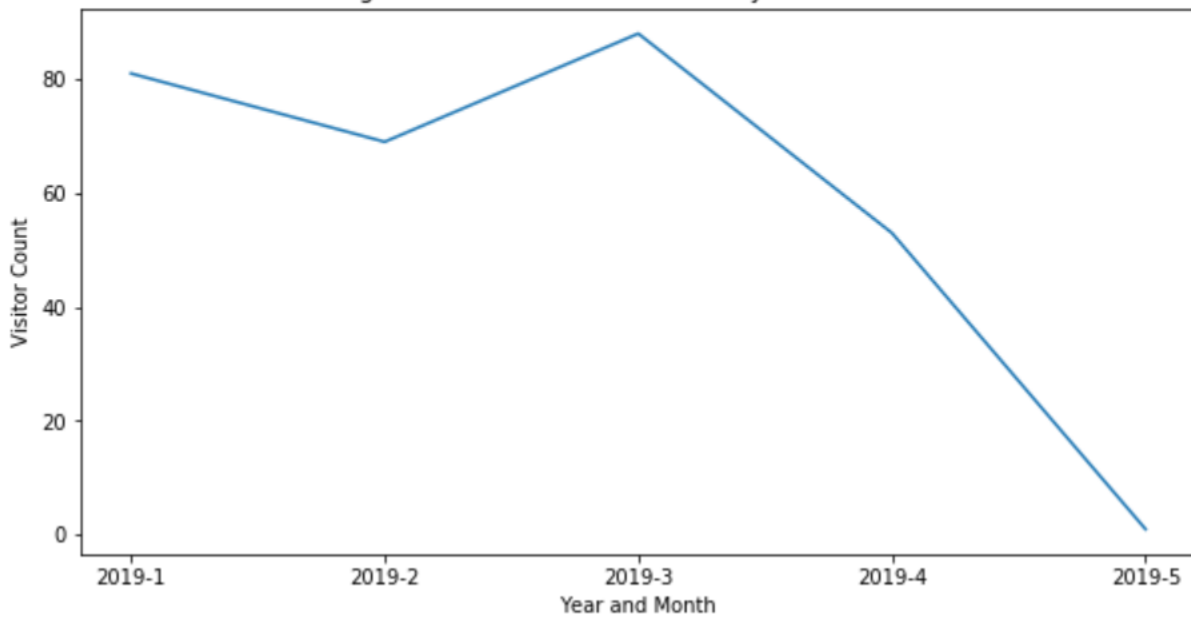


Fig 1.c.1 Trend for 2010 in Disneyland Paris

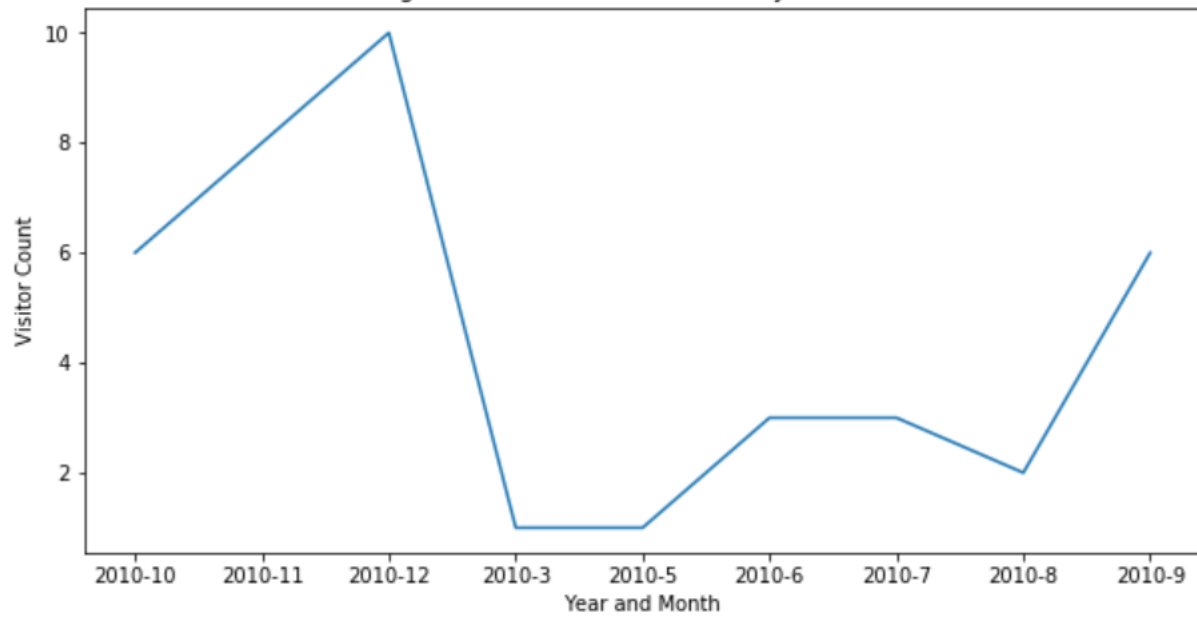


Fig 1.c.2 Trend for 2011 in Disneyland Paris

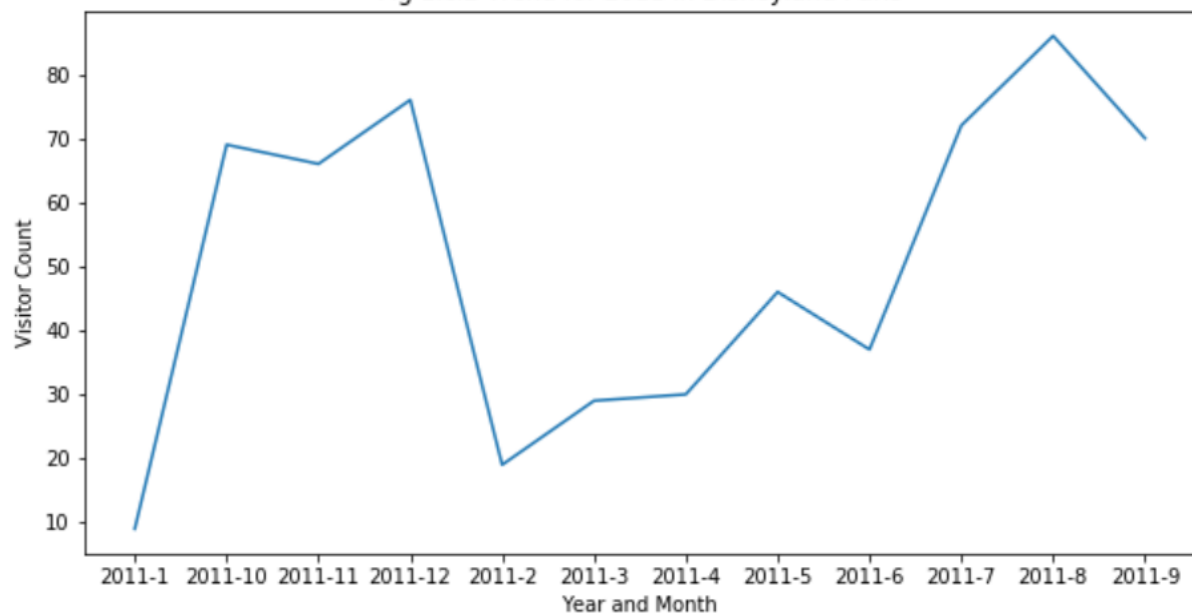


Fig 1.c.3 Trend for 2012 in Disneyland Paris

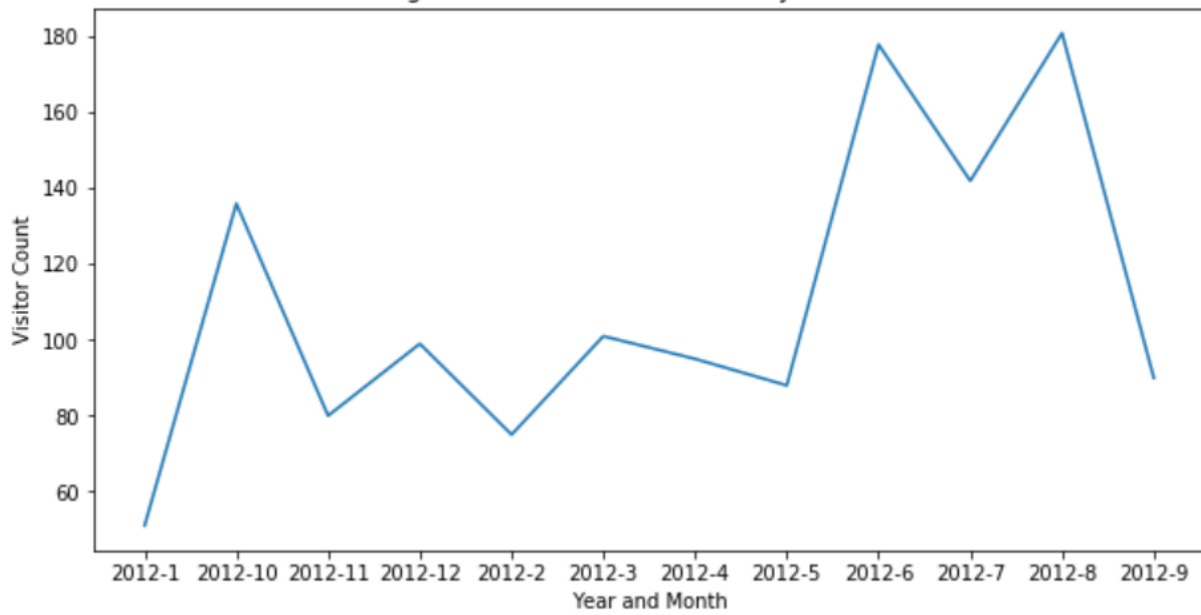
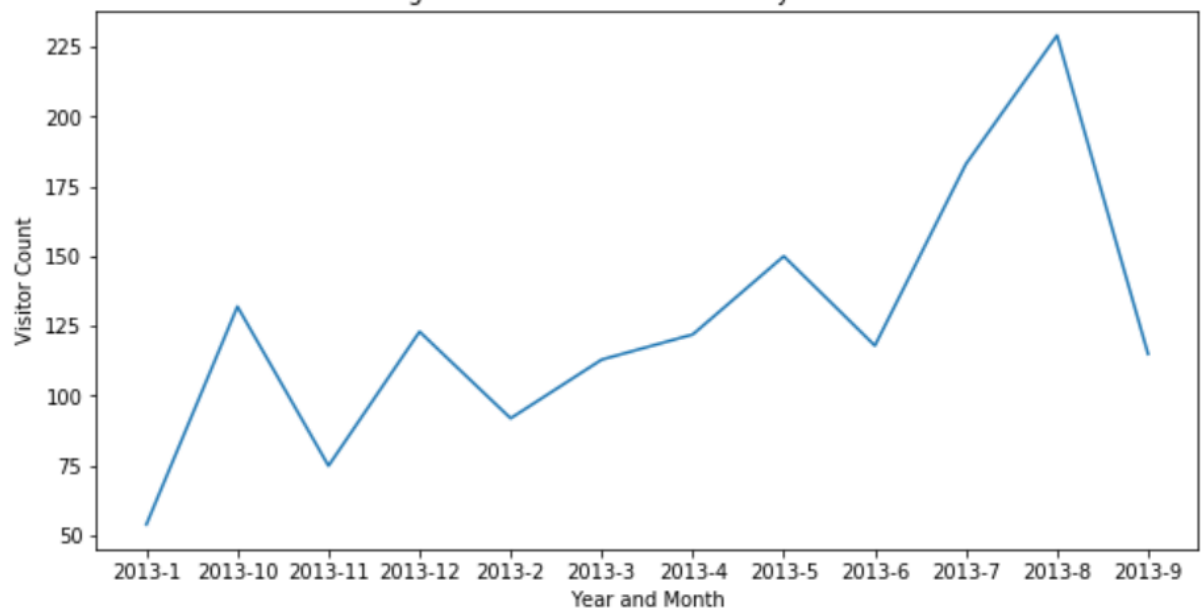


Fig 1.c.4 Trend for 2013 in Disneyland Paris



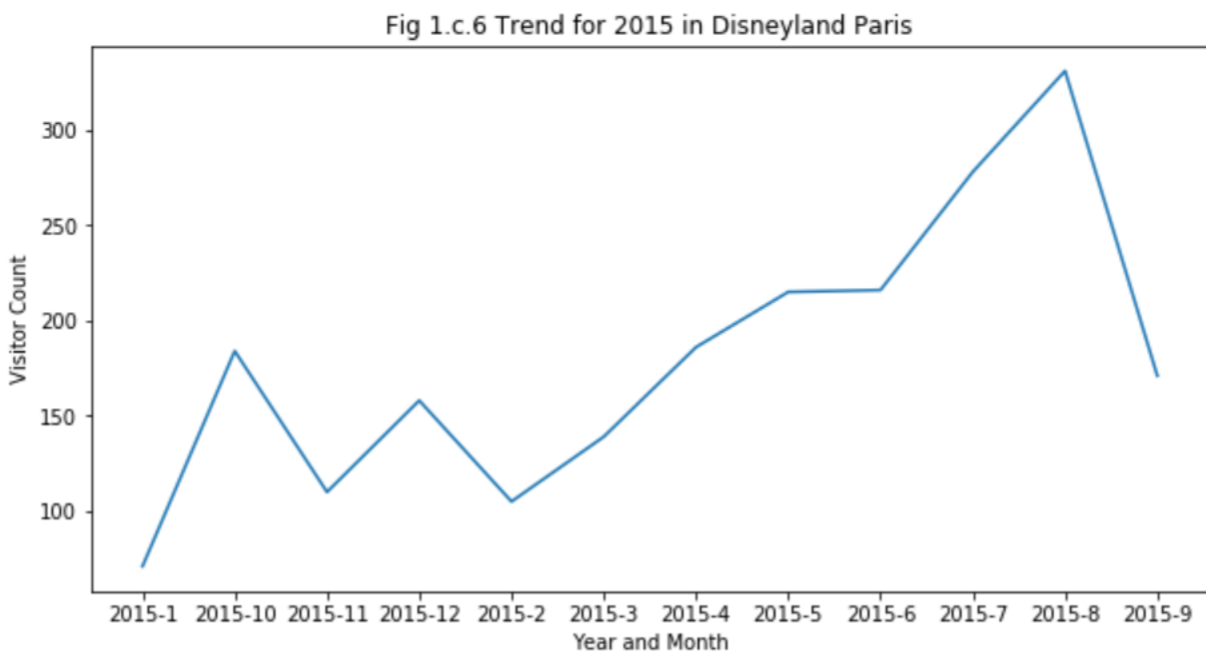
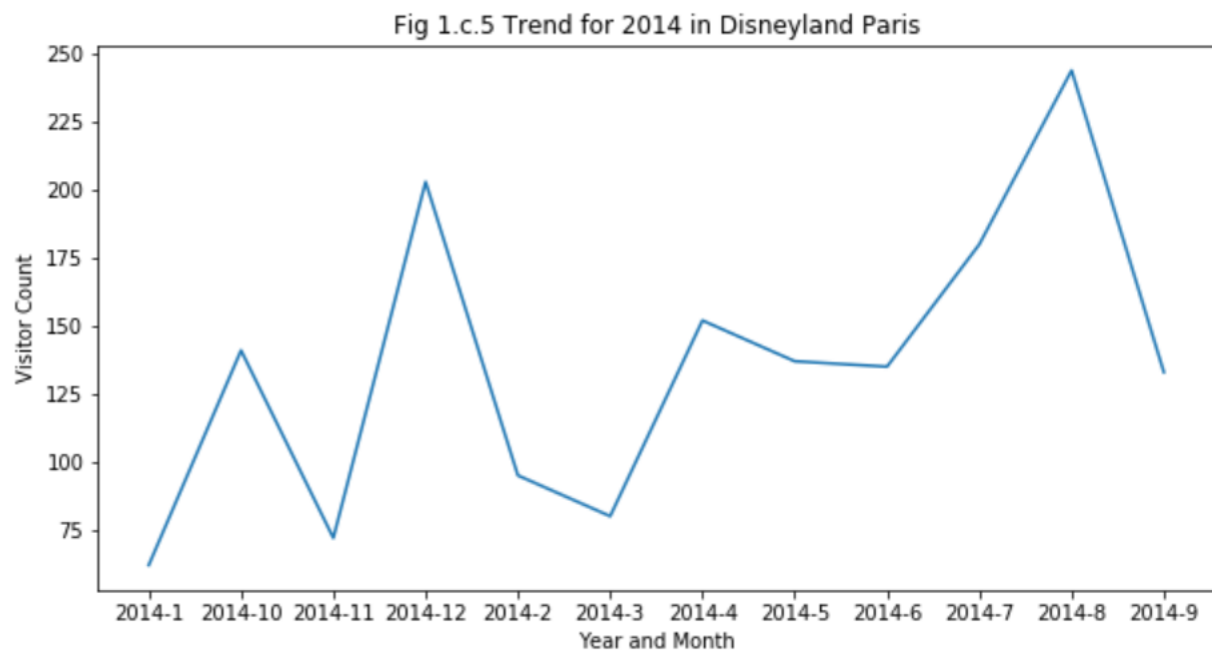


Fig 1.c.7 Trend for 2016 in Disneyland Paris

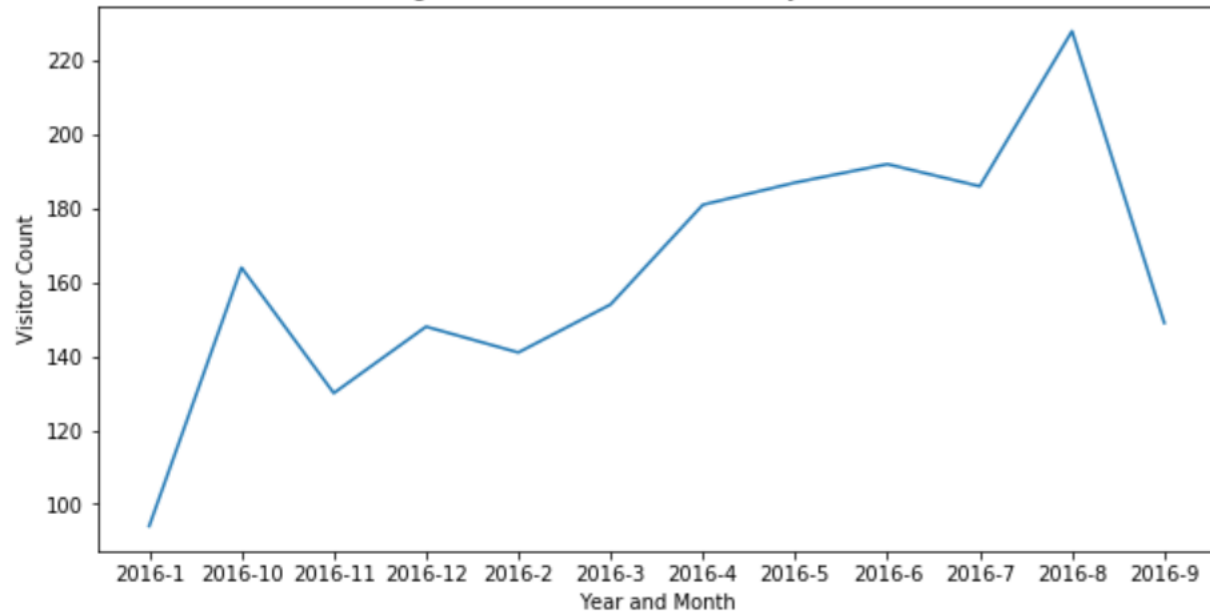


Fig 1.c.8 Trend for 2017 in Disneyland Paris

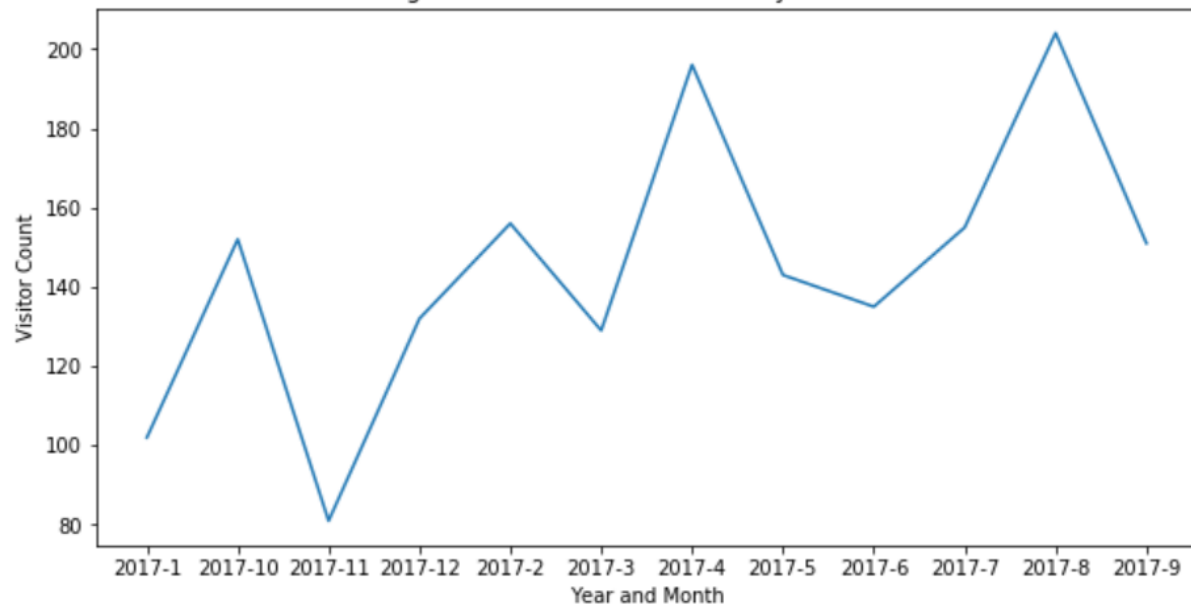


Fig 1.c.9 Trend for 2018 in Disneyland Paris

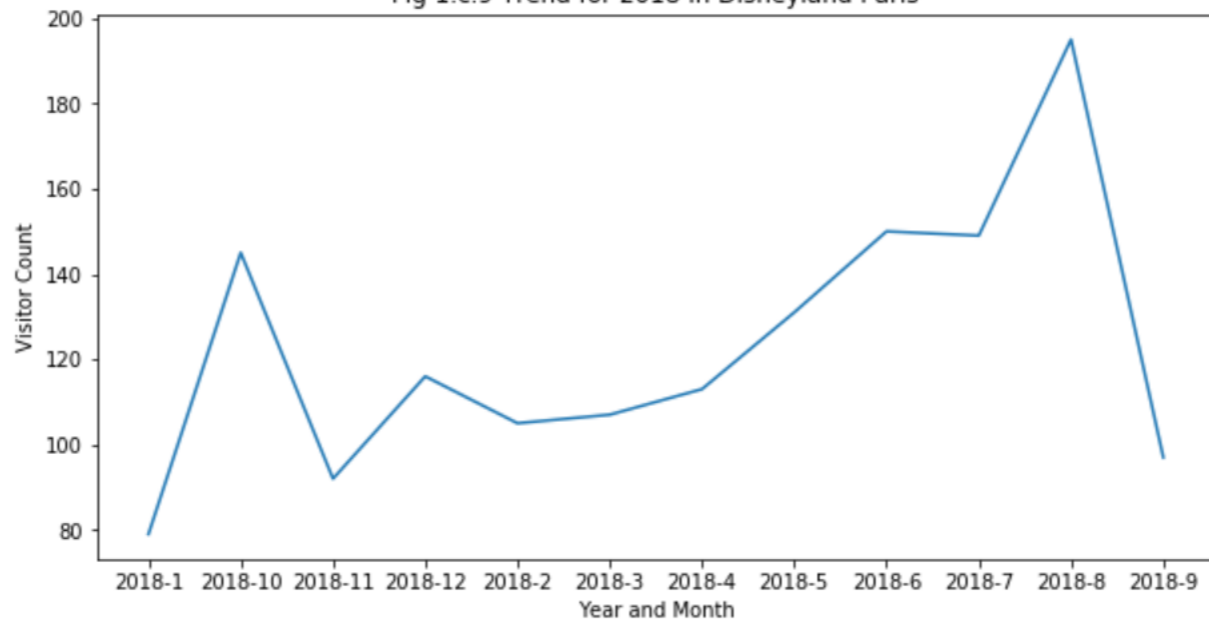


Fig 1.c.10 Trend for 2019 in Disneyland Paris

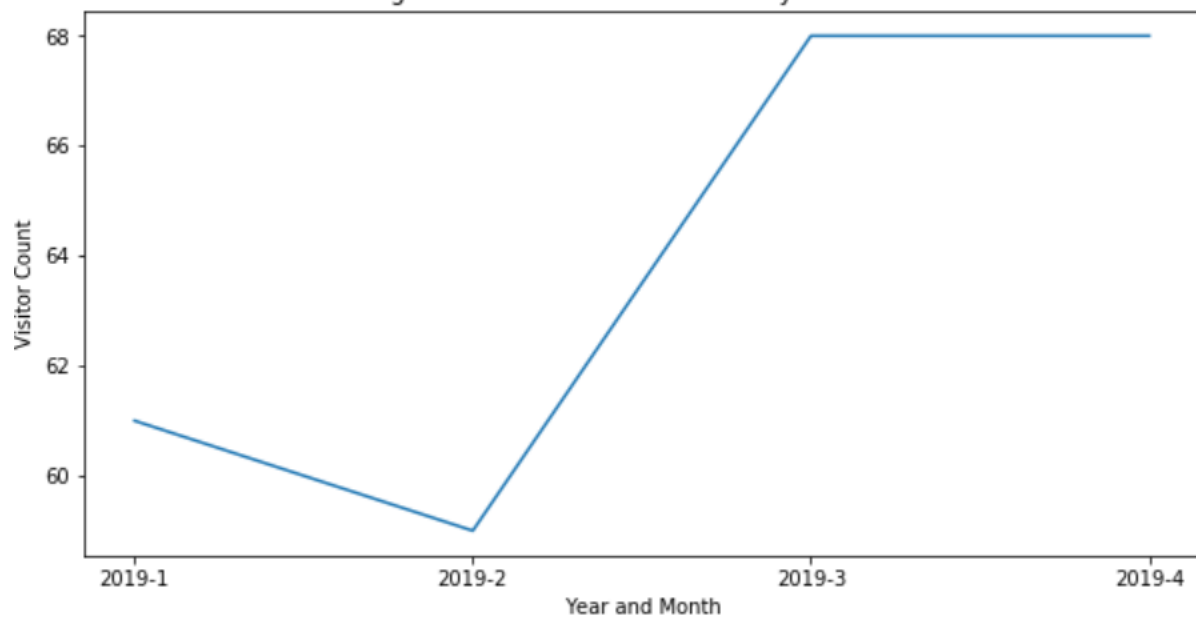


Fig 2.a Bargraph of Top 20 Countries Based on Visitor Population for Disneyland Paris

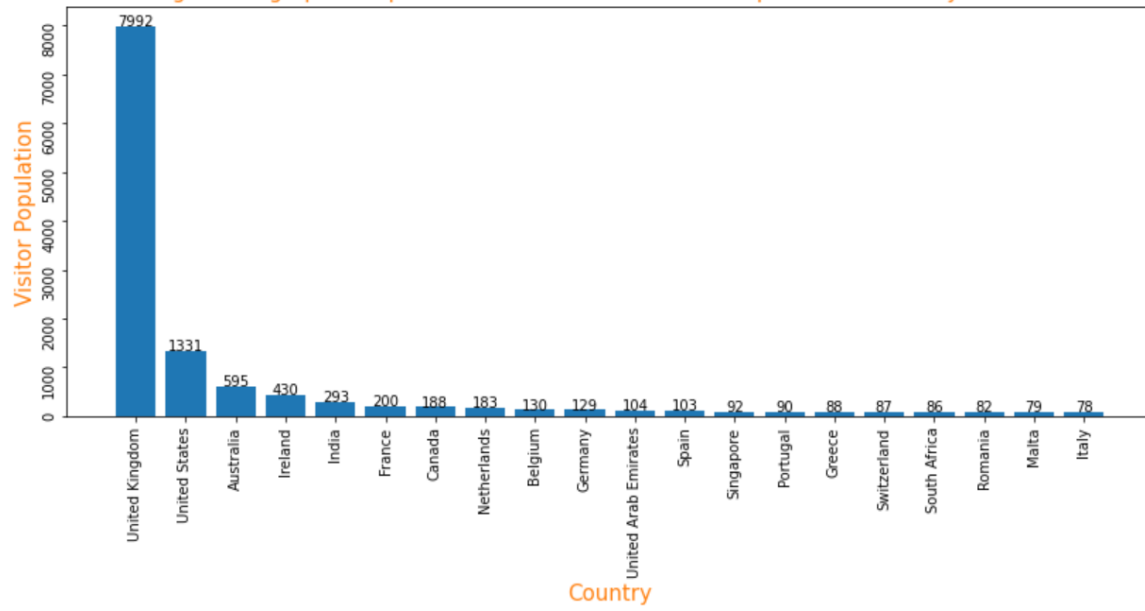
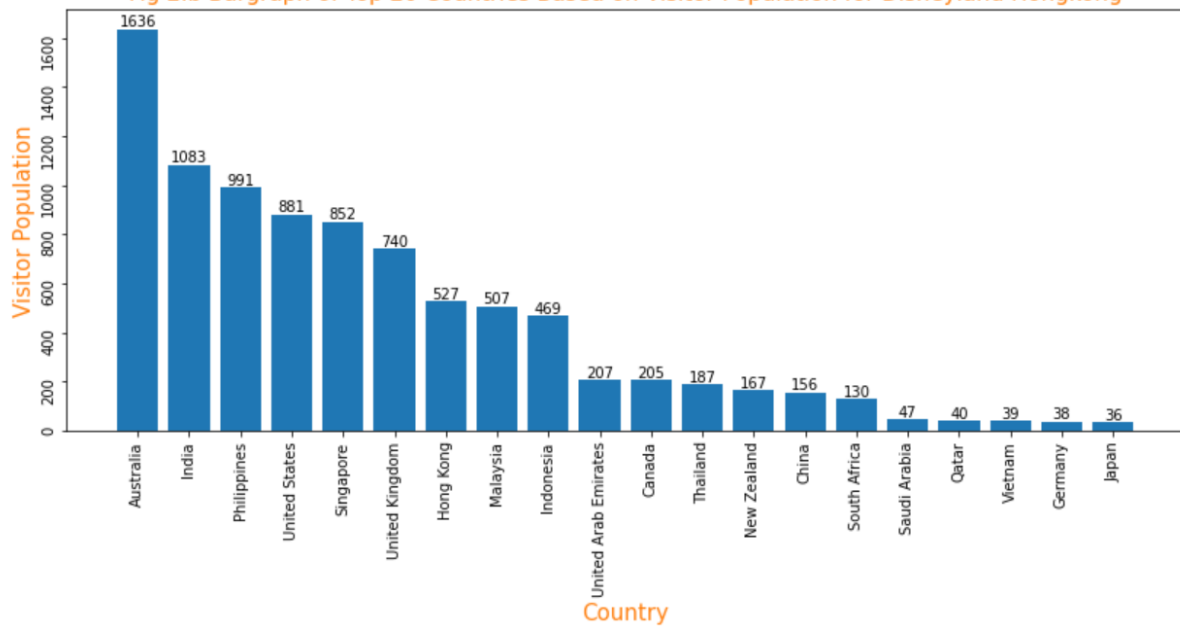
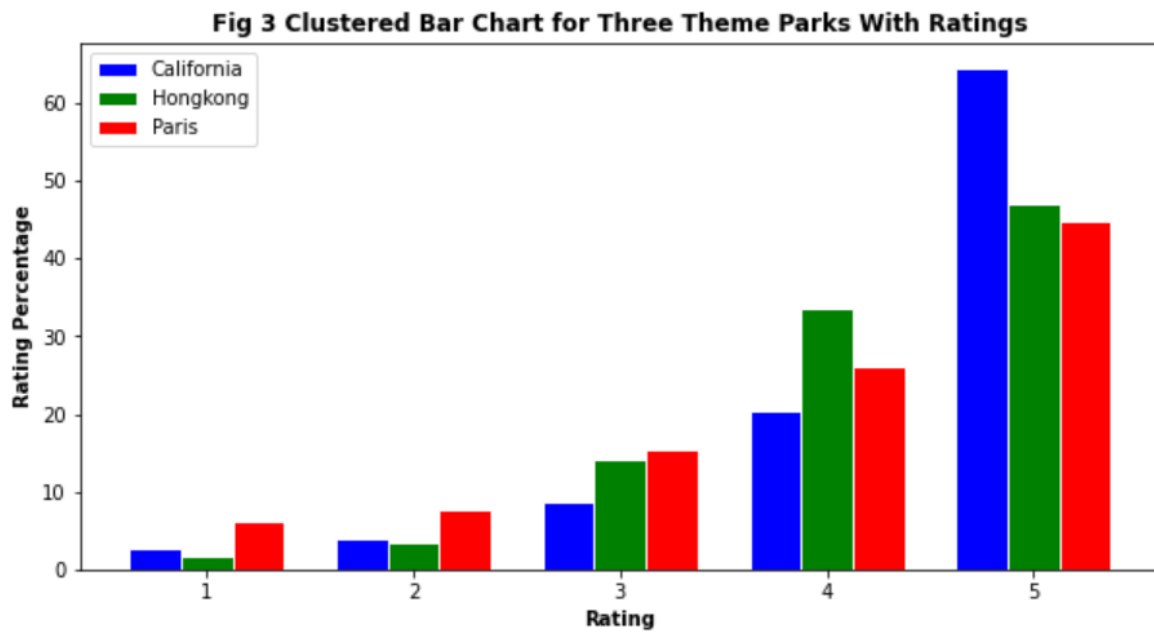
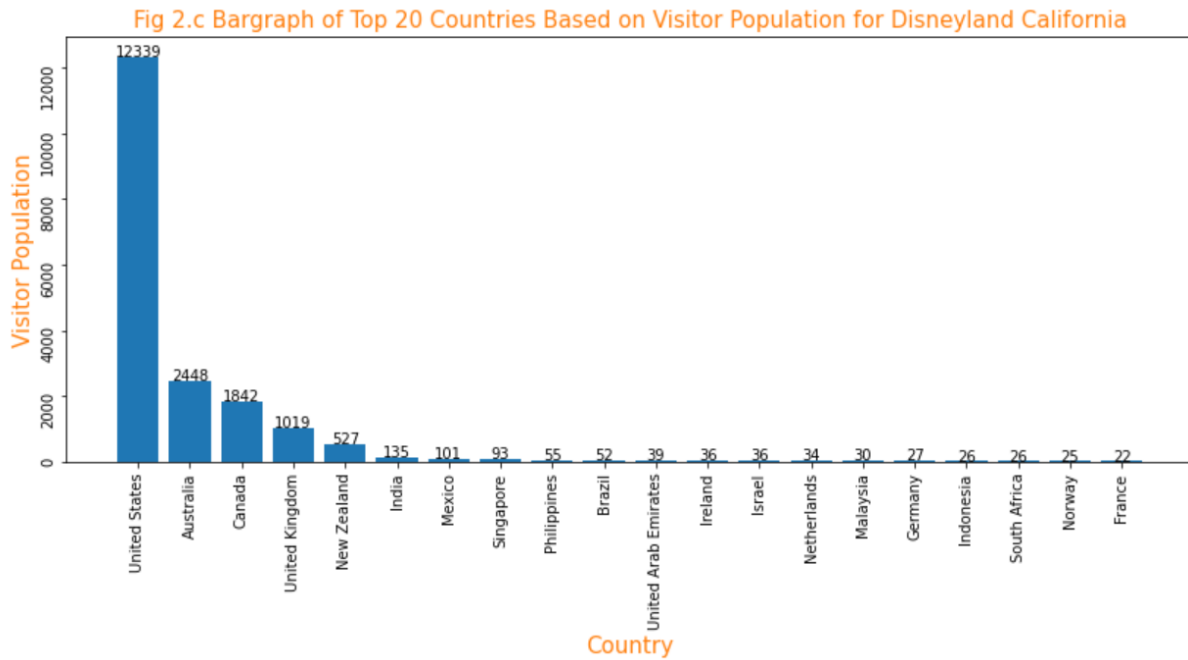


Fig 2.b Bargraph of Top 20 Countries Based on Visitor Population for Disneyland Hongkong







//// Table 1: Rating Table for Theme Parks \\\\

\*\*\*\*\* Rating for Disneyland Hongkong \*\*\*\*\*

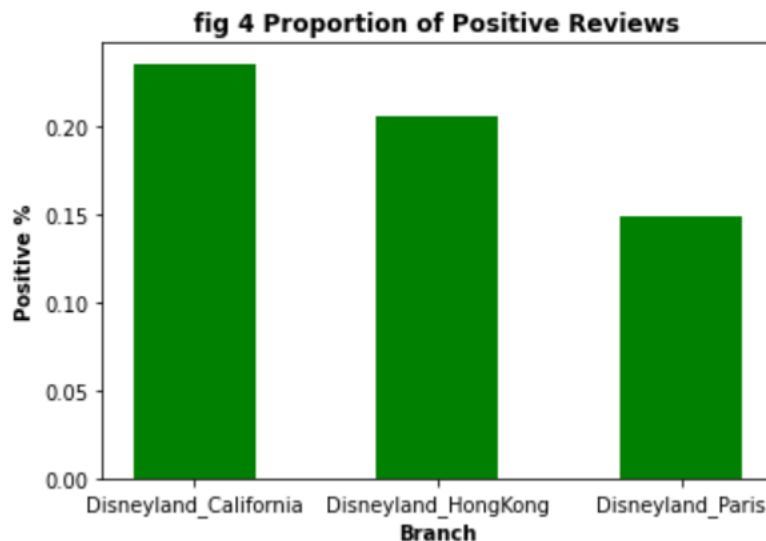
	Branch	Rating	Rating_Count	Percent_Rating
5	Disneyland_HongKong	1	172	1.79
6	Disneyland_HongKong	2	336	3.49
7	Disneyland_HongKong	3	1365	14.19
8	Disneyland_HongKong	4	3230	33.58
9	Disneyland_HongKong	5	4517	46.95

\*\*\*\*\* Rating for Disneyland California \*\*\*\*\*

	Branch	Rating	Rating_Count	Percent_Rating
0	Disneyland_California	1	499	2.57
1	Disneyland_California	2	747	3.85
2	Disneyland_California	3	1661	8.56
3	Disneyland_California	4	3981	20.51
4	Disneyland_California	5	12518	64.51

\*\*\*\*\* Rating for Disneyland Paris \*\*\*\*\*

	Branch	Rating	Rating_Count	Percent_Rating
10	Disneyland_Paris	1	828	6.07
11	Disneyland_Paris	2	1044	7.66
12	Disneyland_Paris	3	2083	15.28
13	Disneyland_Paris	4	3564	26.15
14	Disneyland_Paris	5	6111	44.83



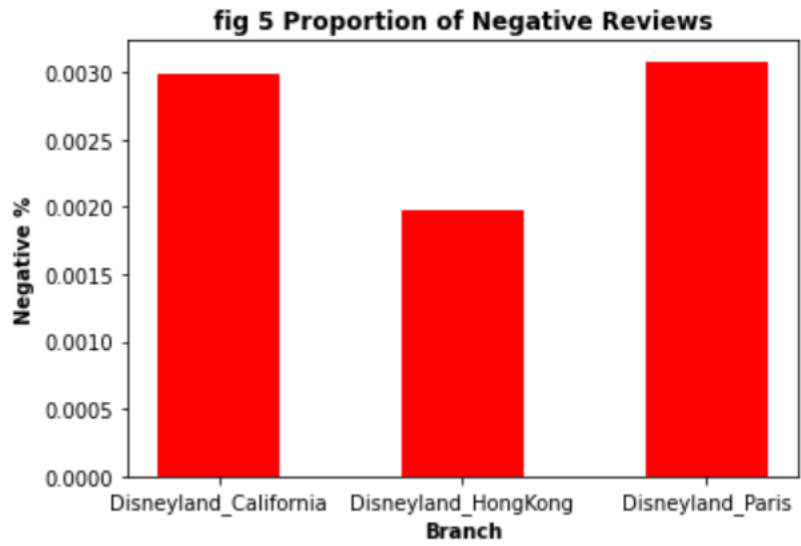


fig 6 Proportion of Positive Reviews by Services for Three Theme Parks

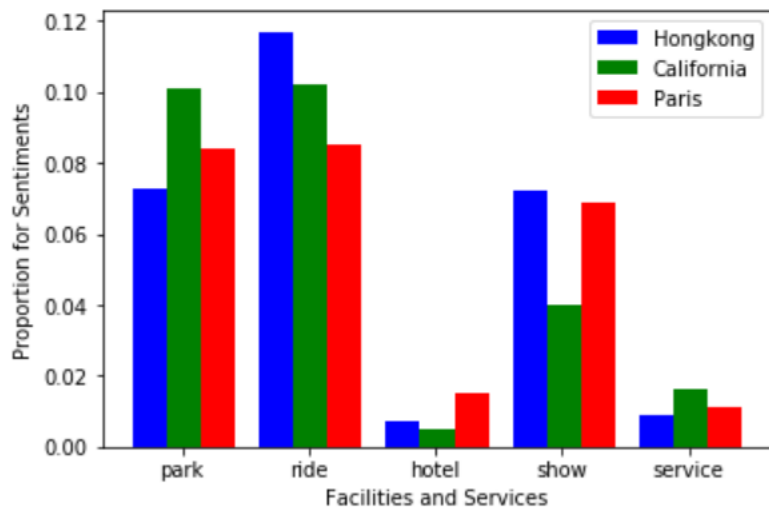


fig 7 Proportion of Negative Reviews by Services for Three Theme Parks

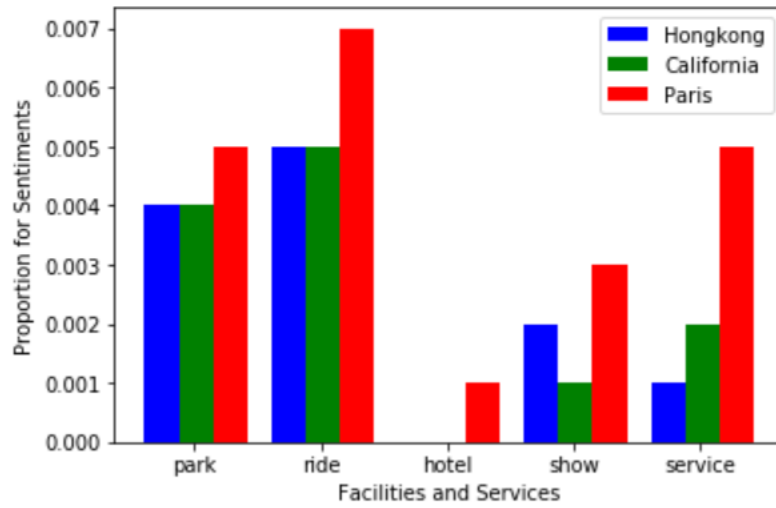
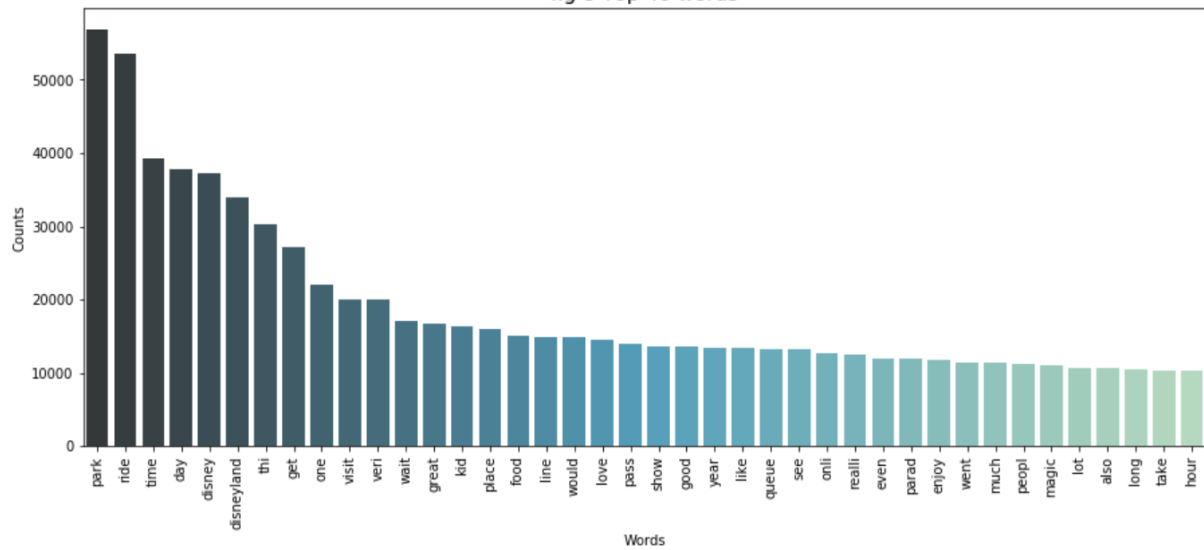
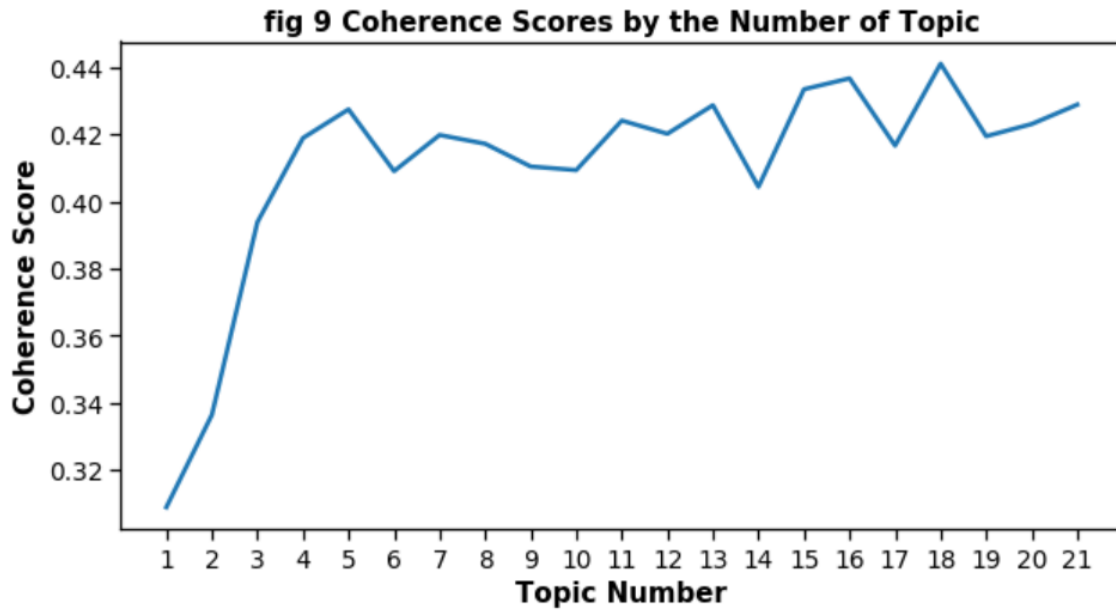


fig 8 Top 40 words





**Fig 10: Top 5 Topics**

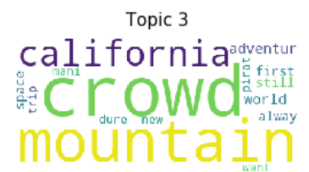


fig 11 Importance of Topics by Different Theme Parks

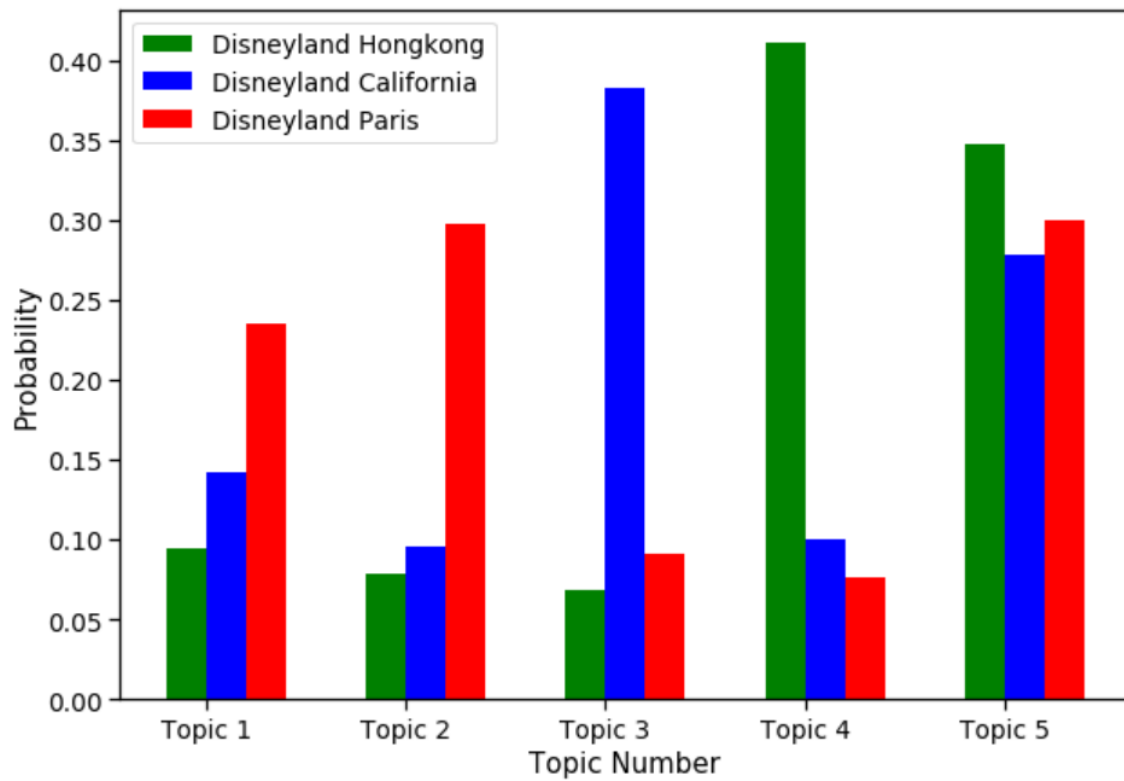


fig 12 Importance of Topics by Major Visitor Groups

