Disneyland Review Analysis

Introduction

The Walt Disney Company's world-class customer service can be attributed to their implementation of the Five Keys: safety, courtesy, inclusion, show, and efficiency. Though each key is essential and work together to provide an exceptional experience for our guests, I will be focusing on the courtesy key by analyzing the reviews provided by the park guests. The company takes great interest in the satisfaction of their guests. The Disneyland Resort Guest Experience team focuses on ensuring guest expectations are not only met but exceeded. They use different methods to gather guest feedback. One of these methods includes conducting high-volume field research across the resort, in which specialists conduct surveys as guests exit the park. Guests are asked a variety of questions regarding different aspects of their park experience. However, with such large park attendance numbers, not all guests can be surveyed. Fortunately, social media platforms can be used to gain further insight of the guest experience.

Business Problem

Using reviews provided by Disneyland park guests on Trip Advisor, I set out to answer the following questions:

- What was the overall rating of each park?
- Which topics are trending among satisfied guests?
- Which topics are trending among unsatisfied guests?
- What are potential solutions to improve the guest experience?

It is important to understand the strengths and weakness of each park. Trending topics for satisfied guests indicate what Disney is doing well and should continue doing. Those that are trending for dissatisfied guests indicate the areas that have room for improvement.

Methods

I obtained the Disneyland Reviews data from Kaggle. The data consists of over 40,000 reviews with the following variables:

- Review_ID: unique identifier for each review
- Rating: the rating score given by the reviewer
- Year_Month: the year and month of the visit, ranging from October 2010 to May 2019
- Reviewer_Location: the country of origin of the reviewer
- Review_Text: the written feedback provided by the reviewer
- Branch: the Disneyland park being reviewed

First, I performed exploratory analysis. The rating score given by the reviewer ranged from 1 to 5, with 1 indicating the guest was completely unsatisfied with their visit and 5 indicating the guest was completely satisfied with their visit. The average rating of all reviews was 4.2. Each review was about one of three Disneyland parks: Disneyland (in California), Hong Kong Disneyland, and Disneyland Paris. The majority of the reviews were written about Disneyland, making up 45.5% of the total reviews. Disneyland Paris and Hong Kong Disneyland made up the other 32% and 22.5% of the reviews, respectively. Disneyland

received the highest rating with an average of 4.4, followed by Hong Kong Disneyland with an average rating of 4.2 and Disneyland Paris with an average rating of 4.0.

Next, I prepared the data for topic modeling use. I created a new variable to capture the sentiment of each review by classifying ratings of 4 and 5 as positive and ratings of 3 and lower as negative. Then, I preprocessed the review text by converting it to lowercase, removing any punctuation, removed any commonly used words, and lemmatized each word to obtain its root form.

Once the data was prepared, I split it by park to further analyze topics in positive and negative reviews of each and removed some of the most common words shared by both. Then, I observed the most common words appearing for each sentiment and performed topic modeling using two methods: Latent Semantic Analysis (LSA) and Latent Dirichlet Allocation (LDA).

Results

Positive Reviews – Disneyland

The most common words appearing in positive reviews for Disneyland can be seen in *Figure 1*. Many park attractions were referenced, such as Indiana Jones, Space Mountain, Haunted Mansion, Small World, Splash Mountain, etc. Other terms I found to be significant include *fast pass*, *parade*, *character*, *fireworks*, *show*, *staff*, and *cast member*.

Figure 1: Word cloud of positive reviews for Disneyland

I found the top five topics using Latent Semantic Analysis and Latent Dirichlet Allocation, as seen in *Table 1*, and the frequency of each topic, as seen in *Figure 2*. Disneyland guests seem most satisfied with the attractions in the park and the Disney FASTPASS® service. They also seem to have great interactions with Disney Cast Members.

Table 1: Ten most common words in the top five topics of positive Disneyland reviews

|	Latent Semantic Analysis	Latent Dirichlet Allocation
Topic 1	great fun wait see pas visit like much fast really	world mountain great pirate much space like fun florida better
Topic 2	fast pas pass use wait ticket long early great hour	cast member great halloween staff birthday special mickey party friendly
Topic 3	ticket bag per dl busy hour map want fastpass voucher	great pas fast wait fun see visit like much really
Topic 4	mountain space splash jones indiana thunder pirate world star haunted	love always great fun earth family happiest visit experience every
Topic 5	world visit love florida much like attraction always better smaller	christmas holiday beautiful fun decoration magical spirit visited havent visit

Negative Reviews - Disneyland

The most common words appearing in negative reviews can be seen in *Figure 3*. Some of the most common words are *wait*, *long*, and *crowd*. Some other words that I found to be interesting include: *closed*, *expensive*, *staff*, and *rude*. Many of the reviews containing *rude* were directed toward Cast Members.

Figure 3: Word cloud of negative reviews for Disneyland

The top five topics using Latent Semantic Analysis and Latent Dirichlet Allocation can be seen in *Table 2*. The frequency of each topic can be seen in *Figure 4*. Disneyland guests are unsatisfied when attractions are closed or when they have long wait times. Though attraction closures and long wait times may be unavoidable, honesty and transparency can help alleviate frustrations among guests. Some solutions may include posting accurate wait times where applicable and communicating any operational changes in a timely manner. Disneyland guests are also unsatisfied with some of the available food offerings. This feedback can be addressed with changes or adjustments to menu items.

Table 2: Ten most common words in the top five topics of negative Disneyland reviews

	Latent Semantic Analysis	Latent Dirichlet Allocation
Topic 1	people hour wait like long many pas back went even	dining spend terrace salad carthay tomatoeshungry fry circlechili tavernefried sour

	Latent Semantic Analysis	Latent Dirichlet Allocation
Topic 2	wait pas minute fast hour long 45 ticket use parking	people hour wait pas ticket long fast minute money back
Topic 3	ticket told said could back member expedia phone fee person	februaryjanuary cliche vacsean going country iwent buy ityou arounld got
Topic 4	people rude ticket many need baby fast leave take front	wait poor lack save minute horrendously tomorrowland holding outrageous guest
Topic 5	ticket price paid experience could pen long ink new hour	people hour like wait went many long back crowd world

Figure 4: Topic counts using Latent Semantic Analysis and Latent Dirichlet Allocation
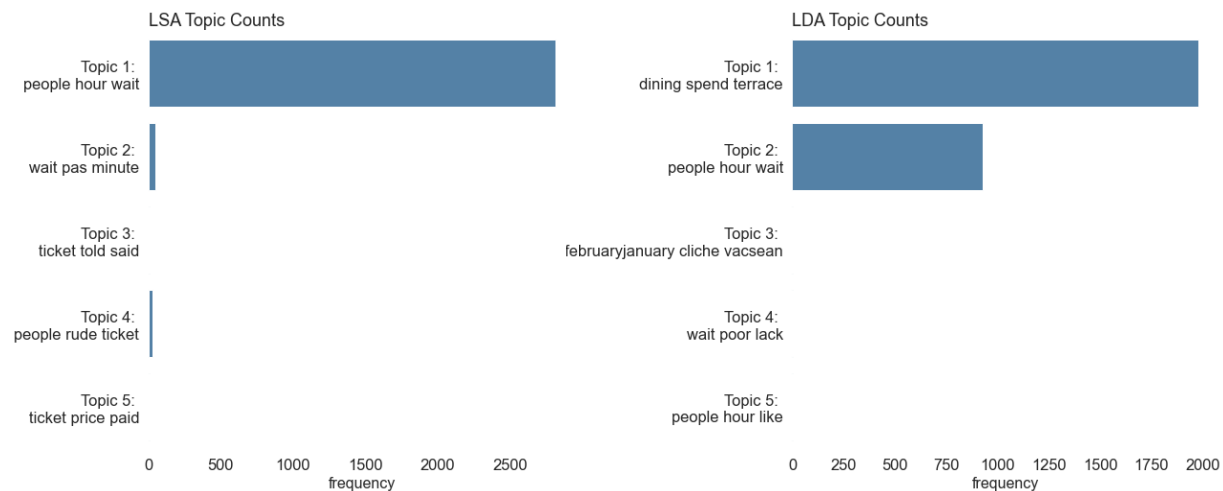
Positive Reviews - Hong Kong Disneyland

The most common words appearing in positive reviews can be seen in *Figure 5*. Like with Disneyland, many reviews contain park attractions and entertainment offerings.

Figure 5: Word cloud of positive reviews for Hong Kong Disneyland

The top five topics found in the reviews can be seen in *Table 2*, and their frequencies can be seen in *Figure 6.* Hong Kong Disneyland guests are most satisfied with the entertainment offerings, such as fireworks, parades, and character meet-and-greets.

Table 3: Ten most common words in the top five topics of positive Hong Kong Disneyland reviews

	Latent Semantic Analysis	Latent Dirichlet Allocation
Topic 1	show great parade visit firework fun went really attraction like	ticket station pm cost meal hkd online bay take buy

Topic 2	show parade king lion mickey firework must miss night amazing	inside still water selfie many familyeven road obvious stick uaccessibility
Topic 3	ticket queue take long station online train bay minute buy	bring child water visit adult happiest earth fun really wear
Topic 4	mountain land space grizzly toy story mystic attraction manor gulch	show great parade visit firework fun really went attraction like
Topic 5	great went really smaller staff old atmosphere think plenty busy	child best going enjoy aloud really photo entrance late veg

Figure 6: Topic counts using Latent Semantic Analysis and Latent Dirichlet Allocation

Negative Reviews - Hong Kong Disneyland

The most common words appearing in negative reviews can be seen in *Figure 7*. Many of the words are similar to those found in negative Disneyland reviews, such as *staff*, *expensive*, *crowded*, and *closed*. It is interesting to see many of the entertainment offers seen in the positive reviews also appearing in the negative reviews.

Figure 7: Word cloud of negative reviews for Hong Kong Disneyland

The top five topics can be seen in *Table 4* and their frequencies in *Figure 8*. Dissatisfaction among Hong Kong Disneyland guests mainly stems from negative interactions with Cast Members. To stress the importance of courtesy, it may be necessary to provide additional tools to Cast Members, such as refresh training. Many of the reviews also described the park as being much smaller compared to other Disney parks and having fewer attractions. A park expansion is not currently possible due to the recent decision

made by the Hong Kong Government to not allow Disney to purchase additional land (Mitchell, 2021); however, refurbishment and updates to the existing land may be considered.

Table 4: Ten most common words in the top five topics of negative Hong Kong Disneyland reviews

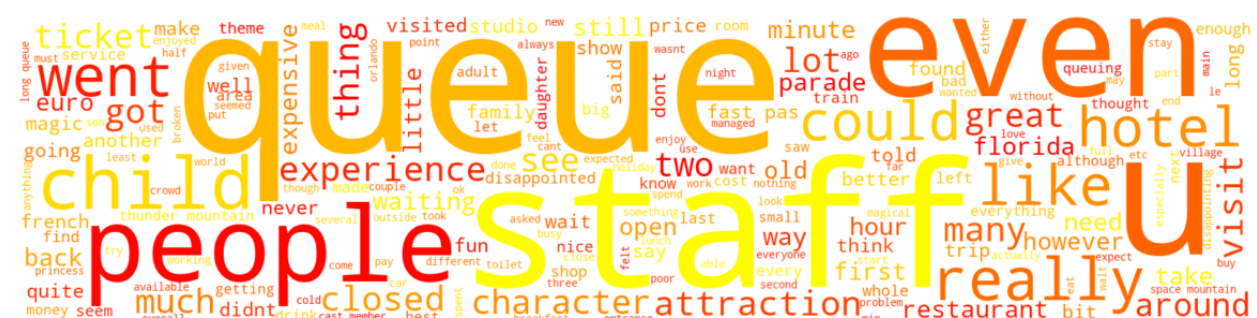|	Latent Semantic Analysis	Latent Dirichlet Allocation
Topic 1	small queue like much really attraction visit child hk went	small much like visit hk child queue really character attraction
Topic 2	small world compared attraction many hk orlando adult fun usa	staff hk dont people small world many even experience like
Topic 3	show lion king firework mickey parade like attraction enjoyed really	staff queue child experience people even hour take like photo
Topic 4	hk queue still better crowded like florida lot world dont	daughter special mother part adult require fridge anger im start
Topic 5	around buy ticket shop photo character avoid take hk model	queue show small attraction really like went long much hk

Figure 8: Topic counts using Latent Semantic Analysis and Latent Dirichlet Allocation

Positive Reviews - Disneyland Paris

The most common words appearing in positive reviews can be seen in *Figure 9*. Similar to Disneyland and Hong Kong Disneyland, satisfied Disneyland Paris guests enjoy attractions and entertainment.

Figure 9: Word cloud of positive reviews for Disneyland Paris

The top five topics found using Latent Semantic Analysis and the top four using Latent Dirichlet Allocation can be seen in *Table 5*, and their frequencies can be seen in *Figure 10.* Disneyland Paris guest are most satisfied with attractions and entertainment offerings.

Table 5: Ten most common words in the top five (LSA) and four (LDA) topics of positive Disneyland Paris reviews

	Latent Semantic Analysis	Latent Dirichlet Allocation
Topic 1	queue great show parade really child character see hotel lot	main land adventureland castle street train route frontierland theatre america
Topic 2	hotel stayed bus stay room euro cost price train recommend	queue great show parade really child character see lot hotel
Topic 3	really love like great nice fun experience castle feel entertainment	per teddy un see book ticket lot parque take clich
Topic 4	ticket fast pas studio mountain buy attraction use train take	ticket hotel take train queue euro pas hour fast great
Topic 5	went queue got really fun great back loved long didnt	

Figure 10: Topic counts using Latent Semantic Analysis and Latent Dirichlet Allocation

Negative Reviews - Disneyland Paris

The most common words appearing in negative reviews can be seen in *Figure 11*. One of the most common words included in reviews is *staff*. Most of the others have been seen in the negative reviews for the other two parks.

Figure 11: Word cloud of negative reviews for Disneyland Paris

The top five topics found using Latent Semantic Analysis and the top three using Latent Dirichlet Allocation can be seen in *Table 6* and their frequencies in *Figure 12*. Similar to Disneyland guests, it appears Disneyland Paris guest are unsatisfied with closures and long waits. They are also dissatisfied with negative interactions with Cast Members, like Hong Kong Disneyland guests. These problems can be dealt with in a similar way that I have previously described.

Table 6: Ten most common words in the top five topics of negative Disneyland Paris reviews

	Latent Semantic Analysis	Latent Dirichlet Allocation
Topic 1	queue hour people staff child like closed minute really even	euro de en le een te parc france het et
Topic 2	queue long hour attraction minute fast child even min wait	glass euro take three pay everything hotel cost sometimes free
Topic 3	hotel room bus breakfast service even got staff told bag	queue hour people staff child like minute closed even really
Topic 4	ticket fast online hotel buy refund euro purchase gate closed	
Topic 5	child euro wait minute buy expensive visit great adult per	

Figure 12: Topic counts using Latent Semantic Analysis and Latent Dirichlet Allocation
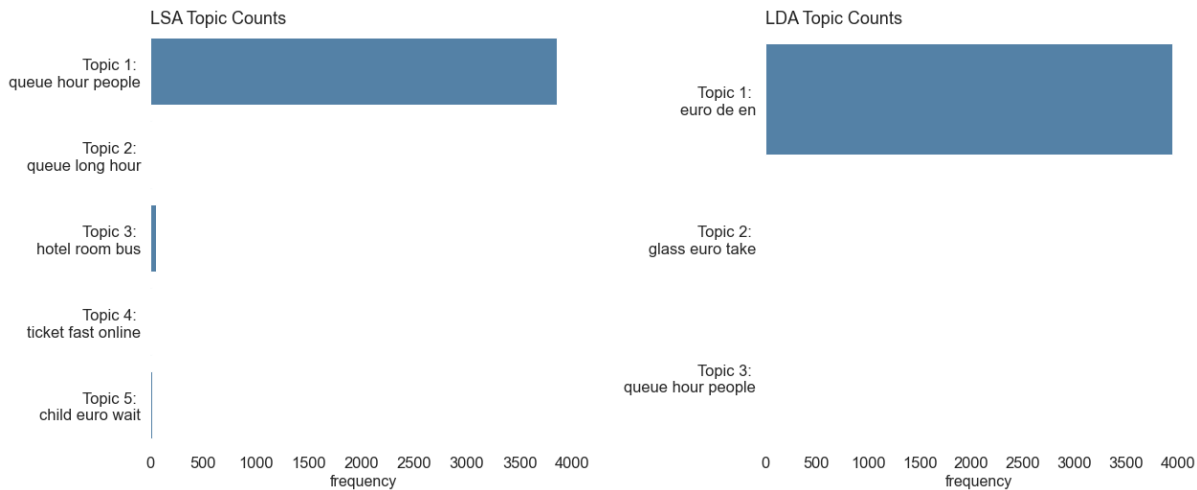
Conclusion

Customer satisfaction plays an important role for all businesses. It is a key indicator used to measure customer loyalty, reduce churn, and increase revenue; however, for the Walt Disney Company, customer satisfaction runs deeper. It likes within the company's core values derived from Walt's dream to create "a place for people to find happiness." The Walt Disney Company uses a variety of techniques to ensure their park guests are satisfied. Analyzing reviews on social media platforms is just one of many ways of gaining further insight. Understanding the topics that are trending among dissatisfied guests can help the Walt Disney Company be proactive and make appropriate change to improve guest satisfaction, so that it remains *The Happiest Place on Earth*.

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Appendix – Additional Visualizations

Figure A-1: Overall sentiment of reviews
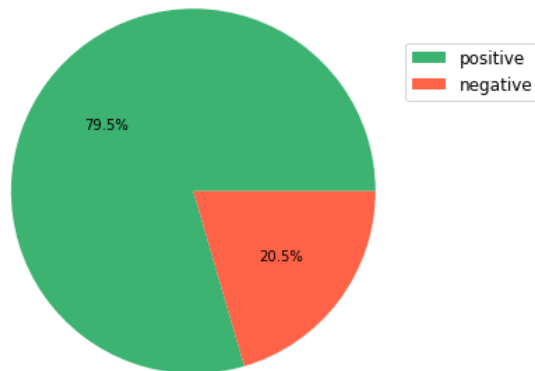
Figure A-2: Number of reviews by park
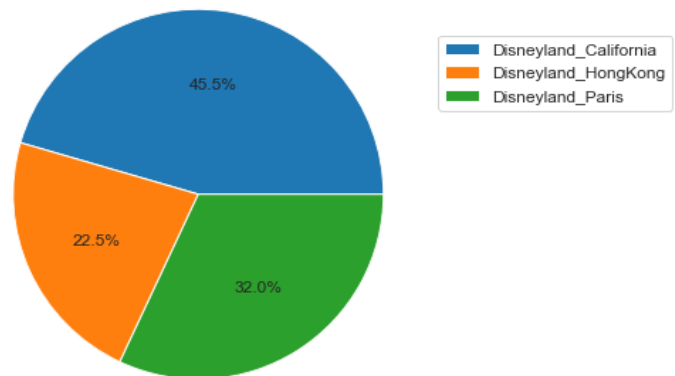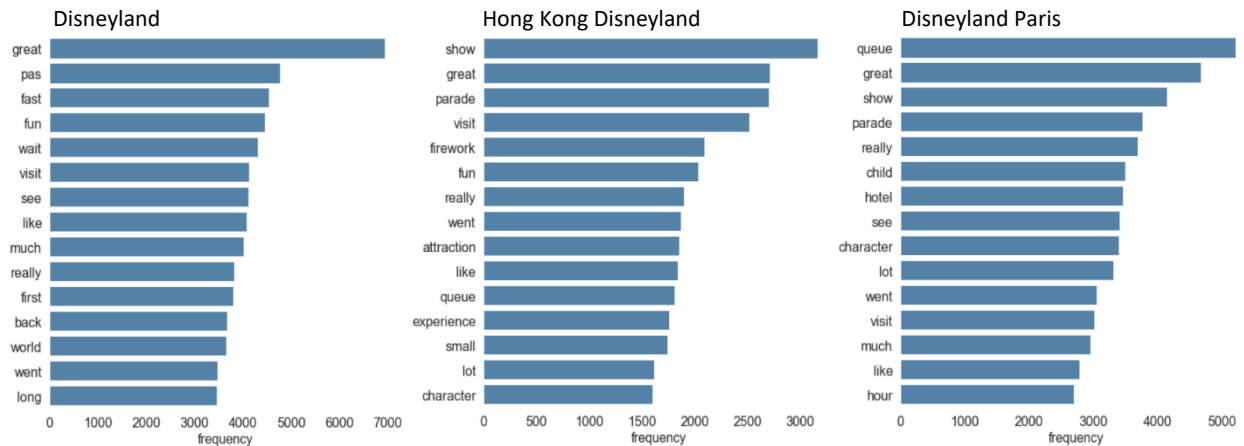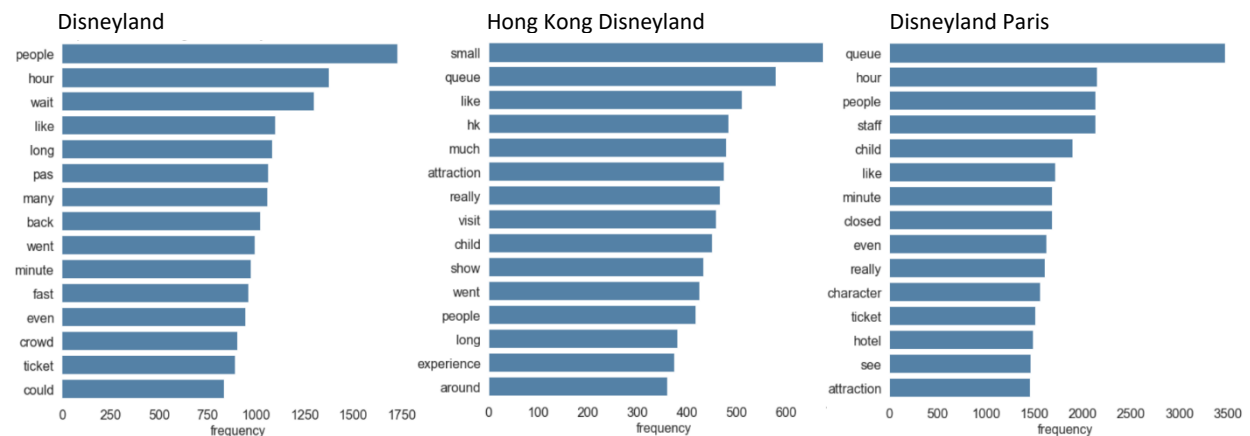
Figure A-3: Top 15 words in positive reviews

Figure A-4: Top 15 words in negative reviews

Q & A

DOMAIN-BASED QUESTIONS

What are the Five Keys?

The Five Keys are safety, courtesy, inclusion, show, and efficiency. Safety is always the priority and should never be sacrificed for another key. Courtesy ensures Cast Members provide guest service that goes above and beyond, exceeding expectation. Inclusion fosters an environment where everyone feels comfortable being their authentic self. Show allows guests to be immersed in the story being told by the Cast Members. Efficiency drives the sense of urgency, causing Cast Members to act promptly and with intention.

What is the Disney FASTPASS® service?

Disney FASTPASS® is a free service that allows theme park guests reserve expedited access to a variety of attractions and entertainment offerings.

What is the size of each park?

Disneyland is the largest of the three parks, at 85 acres. Disneyland Paris is slightly bigger than Hong Kong Disneyland at 62 and 60 acres, respectively.

How many attractions does each park have?

Disneyland is the leader with 39 attractions, followed by Disneyland Paris with 27 and Hong Kong Disneyland with 20.

METHODICAL-BASED QUESTIONS

What is topic modeling?

Topic modeling is a type of unsupervised learning used to detect words and phrase patterns within text-based data. It is used to organize and provide insight to understand abstract topics within the data.

What is Latent Semantic Analysis?

Latent Semantic Analysis can be used to perform topic modeling. It is used to analyze relationships in text-based documents by using Singular Value Decomposition to reduce the number of unique words while preserving the similarity structure among each document (Landauer & Dumais).

What is Latent Dirichlet Allocation?

Latent Dirichlet Allocation can also be used to perform topic modeling. It can be used for text classification and summarization by shortening text-based data to the most commonly occurring words or phrases.

What changes, if any, would you have made to your approach?

My analysis focused on all reviews in the dataset. However, I think it would have been more beneficial to focus on one park and split the data by the visit date. This would have allowed me to understand how trends between satisfied and unsatisfied guests changed over time.