

Multi-Variable Theme Park Analysis

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Introduction

When is the best time of the year to visit the Disney Parks at Walt Disney World in Florida? It is very commonly known that the best times to visit a theme park, such as those at Walt Disney World, is when there are less people present so one does not have to wait as long to enjoy the rides. Florida is also known for its rain, so it is also more enjoyable to visit a theme park when it is nice outside. Both factors need to be taken into consideration when figuring out when exactly is the best time of year to enjoy the parks. Therefore, a few variables that may alter the overall business of the park may include: variation in ticket prices, school breaks, weather and climate in Florida. These variables along with the average wait times of given months should be able to give a clear indication of the best time of the year to visit the theme parks.

Research Methods

We began by taking ride wait times data from December of 2018 until November of 2019. Thus a full fiscal year that the parks are all open. This ride wait time data showed the wait times of 14 of the busiest rides throughout the four different parks throughout their operating hours. This was a lot of data to analyze so we took an average of 30 random wait times from each ride from each given month and compiled that into one table where it could be analyzed with an ANOVA: Two Factor Without Replication (Dependent Data). The next variable to take into consideration is the ticket pricing and whether the ticket prices varied throughout the year. Furthermore, we checked school schedules from 10 of the largest schools in Florida to get a good idea of the schools in Florida and when they typically start, end, and have breaks throughout the year. The last variable is the weather in Florida. We looked at Florida weather data see when there is the most precipitation and bad weather conditions.

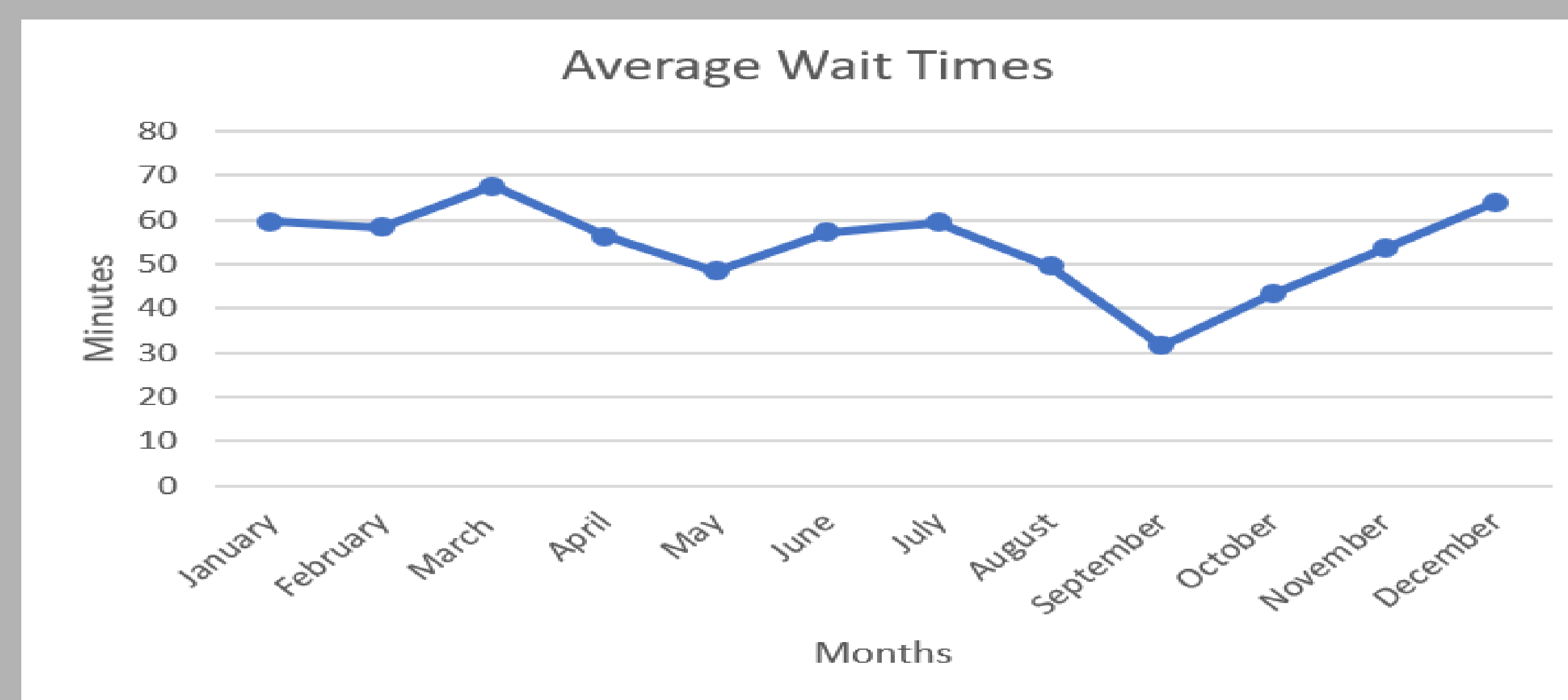
Results

ANOVA	Column1	Column2	Column3	Column4	Column5	Column6
Source of Variation	SS	df	MS	F	P-value	F crit
Rows(Months)	14686.19558	11	1335.108689	15.129593	3.48525E-19	1.856170672
Columns(Rides)	133378.5132	13	10259.88563	116.26611	4.02653E-69	1.789166295
Error	12619.01371	143	88.24485111			
Total	160683.7225	167				

The figure above shows the ANOVA test information that I received. The important thing to look at here is the F and F Critical values. Now since the F value is larger than the F critical in both the rows and columns there is enough evidence to reject the claim that all averages are equal. Meaning that at least one of the averages is different.

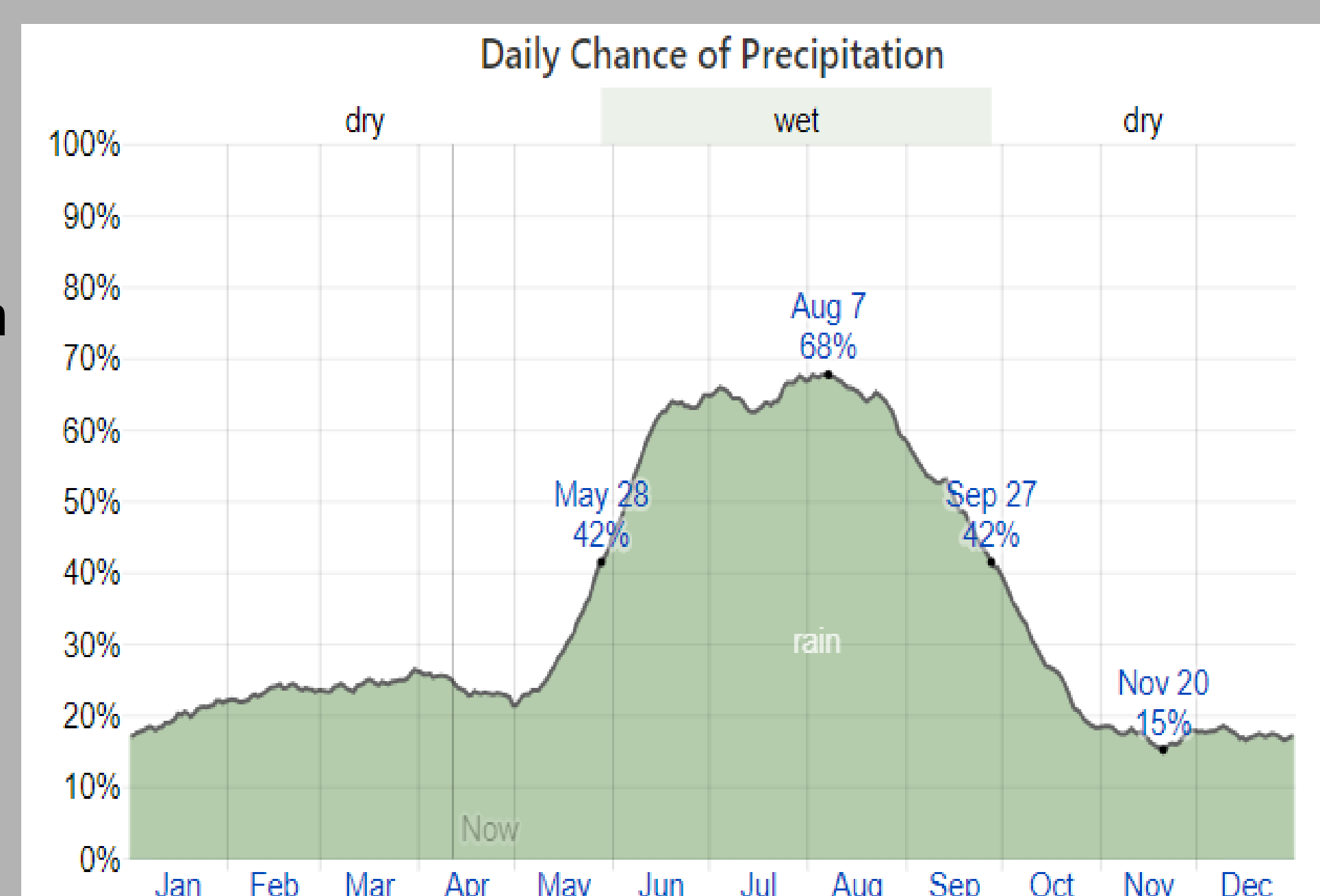
SUMMARY	Count	Sum	Average	Variance
January	14	834.28374	59.59169571	1415.7131
February	14	816.80812	58.34343714	1249.5773
March	14	948.5911	67.75650714	1317.1728
April	14	788.08399	56.29171357	954.02231
May	14	679.29414	48.52101	460.25546
June	14	801.43074	57.24505286	843.72972
July	14	831.47302	59.39093	1205.7729
August	14	693.43325	49.53094643	888.40855
September	14	443.50043	31.67860214	324.13855
October	14	606.46152	43.31868	581.18863
November	14	751.24346	53.66024714	841.60115
December	14	897.7594	64.12567143	1148.9985

This table shows the averages of all 14 rides in a given month throughout the year. The red highlight signifies a higher average wait time while the blue highlights a lower average wait time and that can also be identified on the graph below.



Weather:

The figure to the right shows daily precipitation in Florida. It can be seen that the summer months have highest likelihood of precipitation. Also, The end of August into September is hurricane season.



Adult Ticket Prices

Holiday: \$159 (End of December/Thanksgiving week)
Peak: \$129-\$139 (End of March-April/Select Weekends)
Regular: \$122-\$125 (June-Beginning of August/Early March and December)
Value: \$114-\$117 (May/October/Early November/End of August)
Low: \$109 (September and May)
Showing the cheapest times to visit would be in either September or May.

School Scheduling

Looking at the top 10 largest Florida public schools show they all begin around the second week of August and end the first week of June with major breaks at the end of December and in the middle of March.

Conclusions

Based on multiple factors, we find it best to visit the Walt Disney World theme parks in the month of May.

- Third lowest month in average wait times
- Ticket pricing is in the regular to value range when it comes to cost
- Florida schools will still be in class until the end of the month implying that there will be less people at the park until the summer months hit
- Weather has not hit peak precipitation level and hurricane season does not begin for a few months

Further Research

Conducting further research on the topic would push us to break down wait time analysis even further so that we could find the best week or times throughout the week to visit the Theme Parks. This will allow for those who are visiting the park an easier way to schedule their vacation and optimize their time, especially since they are paying a lot of money to visit the parks.

References

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