

DATA ANALYSIS ON RAINY WEATHER IN SINGAPORE

CONTENT

- 
- 01** WHO AM I
 - 02** PROBLEM STATEMENT
 - 03** PROJECT AIMS
 - 04** RESEARCH FINDINGS
 - 05** CONCLUSION
 - 06** RECOMMENDATIONS

WHO AM I

- Junior Data Analyst at LTA presenting my findings to lead data analyst
- Working on a project with SBS Transit (Train)



PROBLEM STATEMENT

Rainy days affect train commuters around Singapore, hence it is worth analysing the datasets of rainfall and ridership to identify the trends

PROJECT AIMS

Objective n° 1

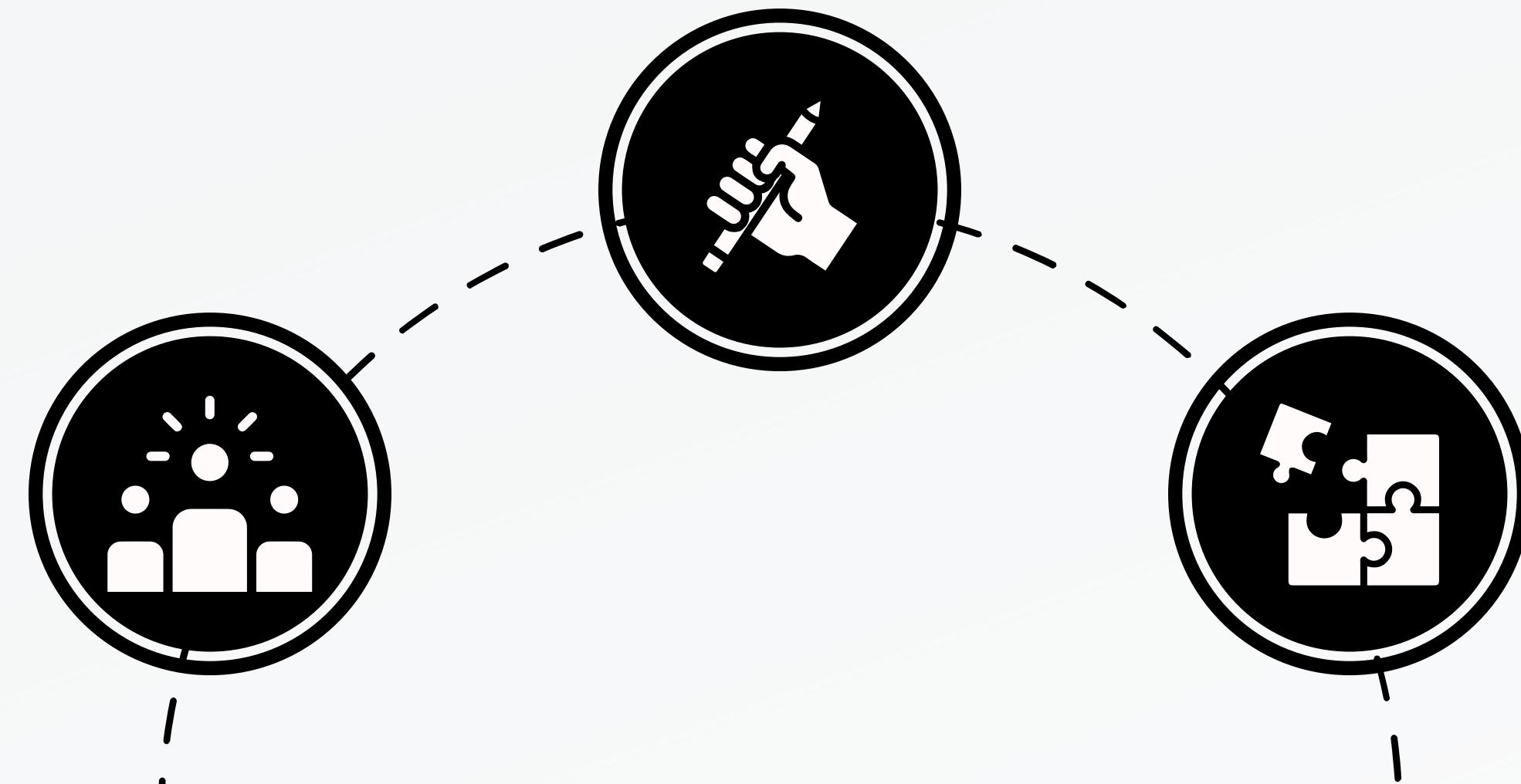
Analyse rainfall and ridership datasets

Objective n° 2

Identify trends and the relationship between rainfall and ridership

Objective n° 3

Conclusions,
recommendations



#01 FINDINGS (RAINFALL)

Rainy Days

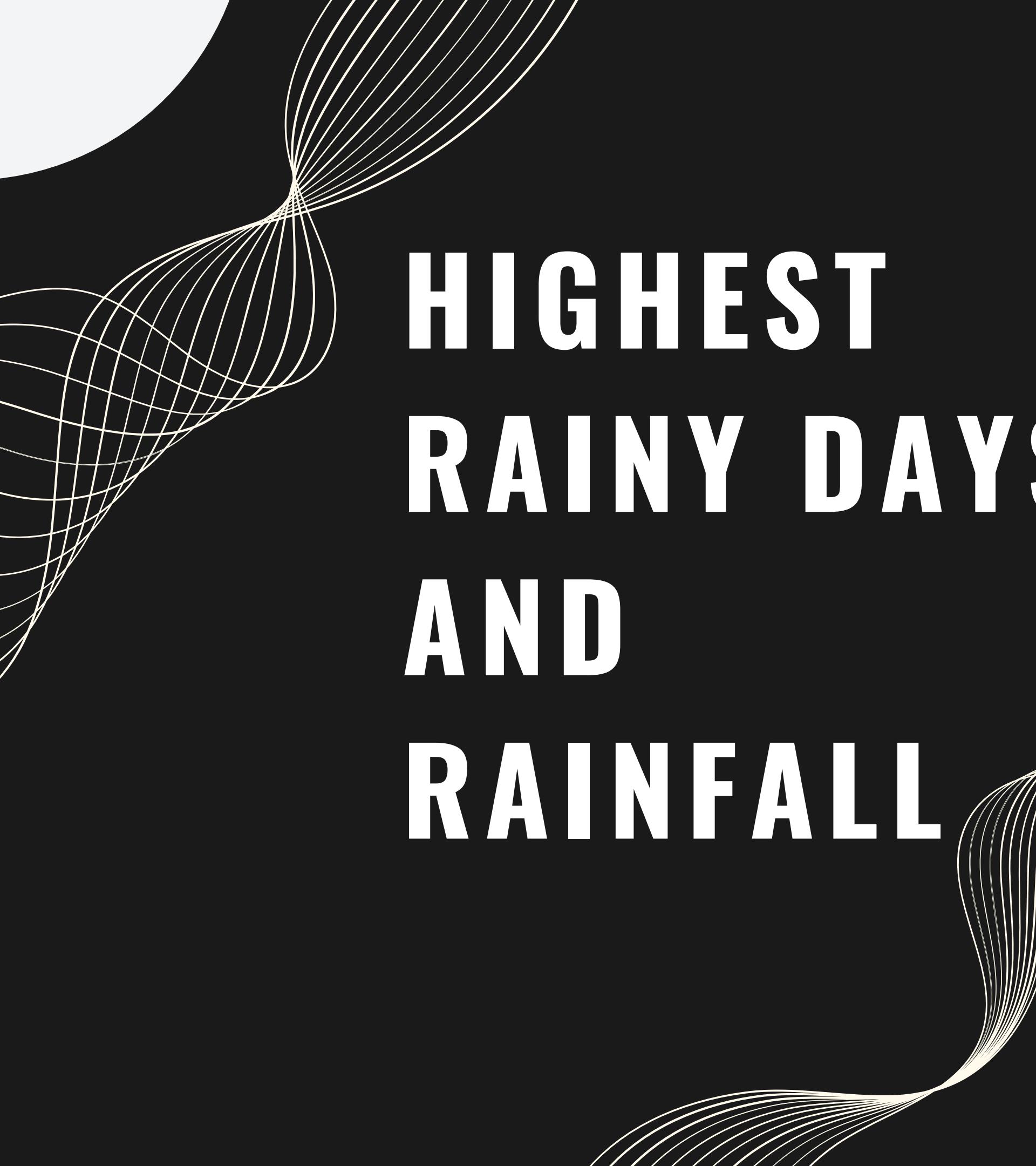
date	max_rain_day	no_of_rainy_days	total_rainfall
2018-11-01	20.6	27	169.6
2018-01-01	45.8	25	287.0
2017-11-01	45.2	24	268.6
2021-08-01	71.4	24	293.6
2014-11-01	64.4	23	250.8

- The top 5 months with the highest number of rainy days in a month.
- The month of November occur 3 times

Total Rainfall

date	max_rain_day	no_of_rainy_days	total_rainfall
2021-01-01	210.6	17	692.8
2019-12-01	74.2	14	421.5
2017-12-01	69.8	23	371.2
2021-11-01	47.8	23	312.4
2015-12-01	40.4	19	302.3

- The top 5 months with the highest total rainfall in a month.
- The month of December occur 3 times



**HIGHEST
RAINY DAYS
AND
RAINFALL**



**NOV-
DEC**



RIDERSHIP FINDINGS (VISUALISATION)

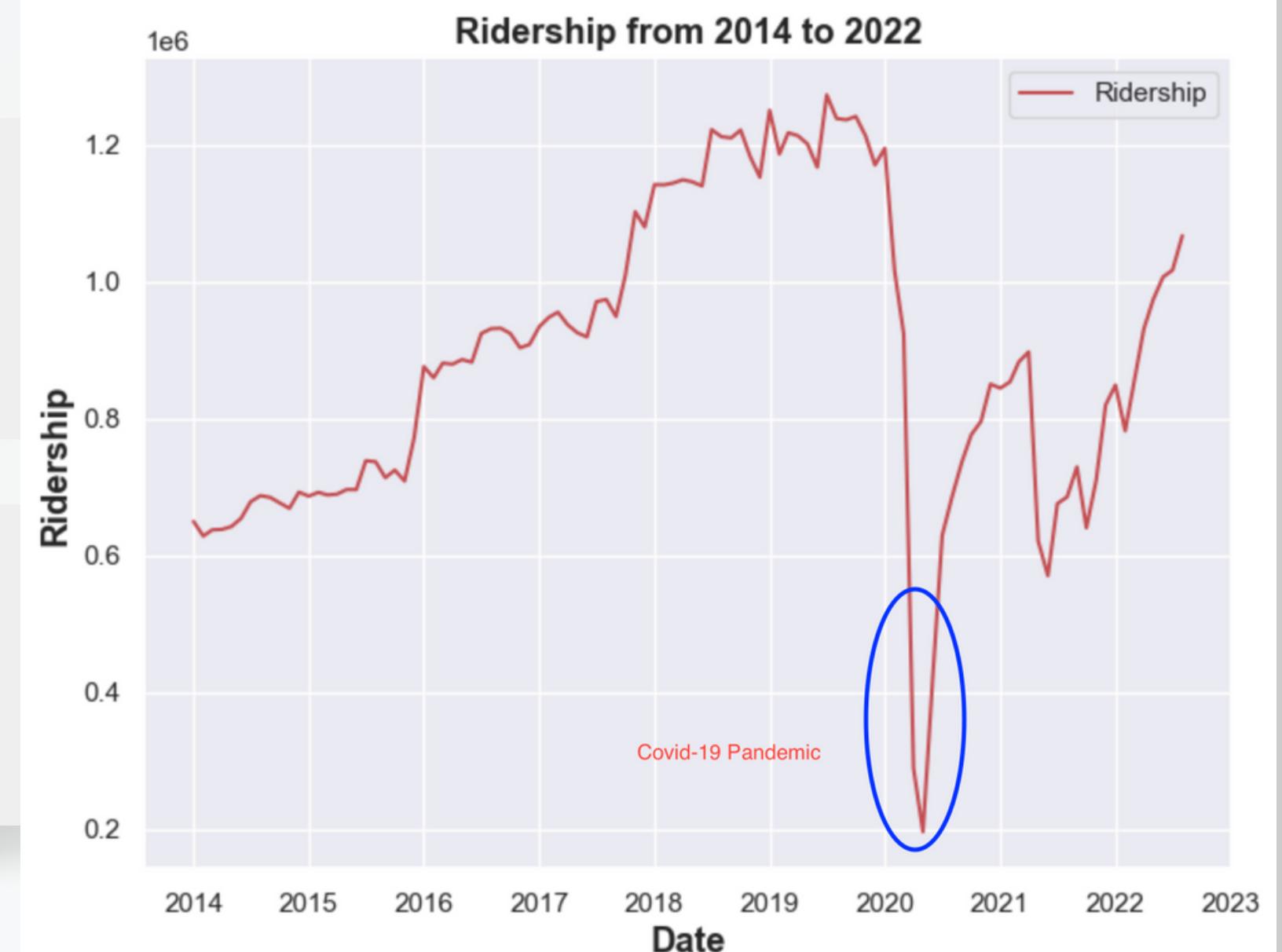


- Population increases overtime hence so will ridership.
- Events can strongly affect ridership (Covid-19)
- Yearly events also cause spike in ridership due to influx of tourism (F1 Grandprix -September, Public Holidays, New Years, National Day)



- Hence, these factors will be taken into consideration
- Pandemic period will be disregarded
- F1 period, September, will be disregarded
- Due population growth over time, surge in ridership will be determine on a Year-to-year basis

Ridership plot



#02 FINDINGS (RIDERSHIP)

Ridership

	date	max_rain_day	no_of_rainy_days	total_rainfall	mean_rh	riders
11	2014-12-01	48.2	17	245.6	82.6	692202
7	2014-08-01	44.2	20	241.0	79.7	687131
8	2014-09-01	34.6	9	83.6	75.6	684510
6	2014-07-01	29.0	15	148.6	78.3	678218
9	2014-10-01	32.8	10	120.0	77.0	676531
	date	max_rain_day	no_of_rainy_days	total_rainfall	mean_rh	riders
23	2015-12-01	40.4	19	302.3	81.1	771239
18	2015-07-01	45.8	13	116.8	74.9	738130
19	2015-08-01	63.2	11	185.8	76.7	736760
21	2015-10-01	28.6	9	87.2	75.4	724470
20	2015-09-01	18.4	8	61.6	75.0	713374
	date	max_rain_day	no_of_rainy_days	total_rainfall	mean_rh	riders
46	2017-11-01	45.2	24	268.6	86.3	1102296
47	2017-12-01	69.8	23	371.2	85.2	1079944
45	2017-10-01	31.2	18	120.8	82.5	1010020
43	2017-08-01	29.4	18	84.2	79.9	974022
42	2017-07-01	30.2	9	79.6	79.6	970856

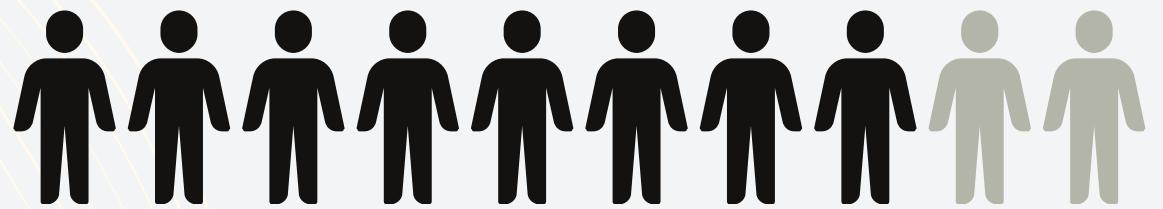
- From 2014-2022 November or December is in the top 5 ridership
- It can be said that the month of November or December has significantly more riderships compared to other months
- Even though there are many contributing factors, November and December is still one of the months that occur in the top 5 riderships year-to-year



**TOP 5 HIGHEST
RIDERSHIP**



**NOV-
DEC**



CONCLUSION

The reason for the outliers could be due to extreme weather, pandemic or International events (e.g F1, TI, Public Holidays)

CONCLUSION 1

As of now the relationship between the two variables can be assumed to have a positive correlation

CONCLUSION 2

Need more datasets to have higher accuracy.
-Station Gantry data
- Monthly Track faults
- Train speed & frequency

CONCLUSION 3

RECOMENDATIONS



Thorough checks on track
and train maintenance on
rainy months as there are
more riderships

STRATEGY N°1



Increase train frequency
On months which has high
number of rainy days

STRATEGY N°2



Work with corporations to
incentivise commuters to
arrive early for work
+Punctuality
+Efficiency

STRATEGY N°3

SOURCES

Meteorological Service Singapore [http://www.weather.gov.sg/climate-climate-of-singapore/#:~:text=Singapore%27s%20climate%20is%20characterised%20by,Monsoon%20from%20June%20to%20September.](http://www.weather.gov.sg/climate-climate-of-singapore/#:~:text=Singapore%27s%20climate%20is%20characterised%20by,Monsoon%20from%20June%20to%20September)

SBS Transit <https://www.sbstransit.com.sg/ridership>

Data.gov <https://data.gov.sg>

THANK YOU

Questions and Answers

