

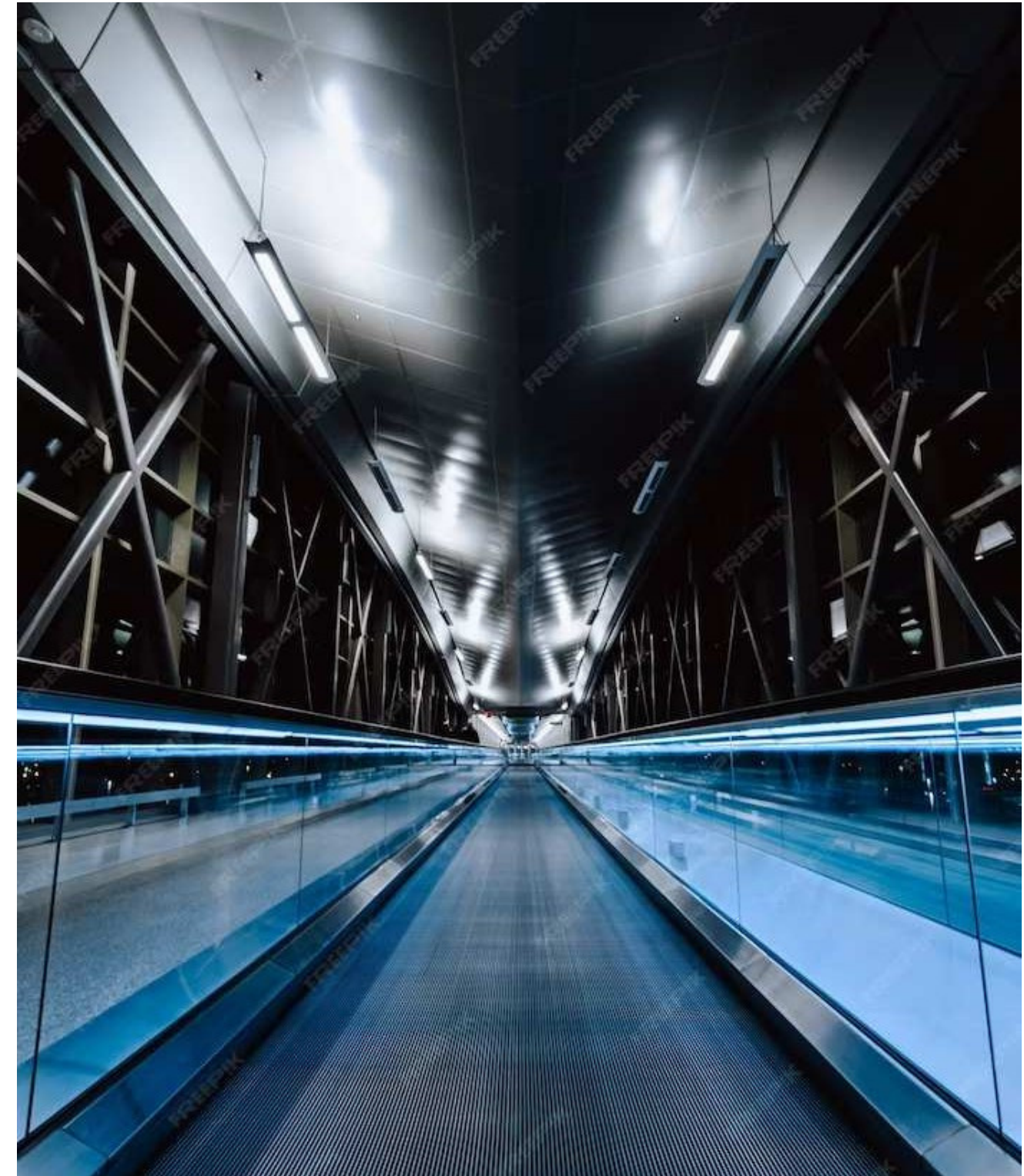
# RIDING THE RAILS: PREDICTING THE FUTURE RIDERSHIP OF MEXICO CITY'S SUBWAY WITH LINEAR REGRESSION ANALYSIS





# RIDING THE RAILS

*Welcome to the future of Mexico City's Subway ridership!* In this presentation, we will explore the **trends** and **predictions** using linear regression analysis and 3 scenarios.





## **Implications and Recommendations**

**Potential impact of predicted ridership on metro operations**

**Strategies to accommodate increased ridership**

**Importance of data-driven decision-making for urban transportation planning**

**Limitations and areas for further research**







## METRO RIDERSHIP DATA

*Uncovering the patterns in the numbers.* We'll delve into the **vast dataset** of Metro ridership to understand the **features** at play.

- Month
- Year
- Subway line and station.
- Weekday
- Holydays
- Season
- District





	fecha	anio	mes	linea	estacion	afluencia	weekday	no_habil	season	Summer_vacations	Dia	Delegacion
0	2010-01-01	2010	Enero	Línea 1	Zaragoza	20227	4	True	4	False	1	Venustiano Carranza
1	2010-01-01	2010	Enero	Línea 1	Isabel la Católica	6487	4	True	4	False	1	Cuauhtémoc
2	2010-01-01	2010	Enero	Línea 1	Moctezuma	10304	4	True	4	False	1	Venustiano Carranza
3	2010-01-01	2010	Enero	Línea 1	Pino Suárez	8679	4	True	4	False	1	Cuauhtémoc
4	2010-01-01	2010	Enero	Línea 1	Gómez Farías	19499	4	True	4	False	1	Venustiano Carranza
...	...	...	...	...	...	...	...	...	...	...	...	...
973240	2023-08-31	2023	Agosto	Línea B	Romero Rubio	14861	3	False	2	False	31	Venustiano Carranza
973241	2023-08-31	2023	Agosto	Línea B	Río de los Remedios	15842	3	False	2	False	31	Gustavo A. Madero
973242	2023-08-31	2023	Agosto	Línea B	San Lázaro	24833	3	False	2	False	31	Cuauhtémoc
973243	2023-08-31	2023	Agosto	Línea B	Tepito	19832	3	False	2	False	31	Cuauhtémémoc
973244	2023-08-31	2023	Agosto	Línea B	Villa de Aragón	15716	3	False	2	False	31	Gustavo A. Madero



## FEATURE ENGINEERING

***Crafting the perfect model.*** Explore the **key features** that influence Metro ridership and how we identify and manipulate them for accurate predictions.



## MODEL TRAINING AND TESTING



***Testing the tracks for smooth rides.*** We'll walk through the process of **training** and **testing** our model to ensure its reliability.



12.09	41.15	71.97	▲	2.75	71.97	42.15
71.88	12.09	12.62	▲	1.85	91.33	12.09
42.09	71.88	91.33	▲	1.22	12.09	91.33
91.33	14.44	12.09	▲	5.85	71.97	12.09
12.09	91.33	71.97	▲	3.30	42.66	71.97
71.97	12.93	42.16	▼	-1.63	41.15	42.66
91.33	71.97	41.15	▲	1.69		41.15
12.09	42.66	12.09	▲	1.95	71.88	
71.97	41.15	11.88	▲	2.15	42.09	71.88
41.15	12.09	42.09	▲	2.30	91.33	14.44
12.09	71.88	91.33	▲	1.22	12.09	91.33
71.88	42.09	12.09	▲	5.19	71.97	12.93
19.99	91.33	71.97	▲	3.30	91.33	71.97
91.33	12.09	16.98	▲	1.95	12.09	42.66
12.09	91.33	91.33	▲	2.75	71.97	41.15
71.97	12.09	12.09	▲	1.85	41.15	12.09
49.66	71.97	71.97	▲	1.22		71.88
41.15	11.66	42.16	▲	3.60	71.88	
12.09	41.15	41.15	▼	-0.33	19.99	91.33
71.88	12.09	12.09	▲	5.19		12.09

## PREDICTIVE ANALYSIS RESULTS

***Peering into the crystal ball.*** Discover the **insights** and **forecasts** generated by our predictive analysis of Mexico City's subway ridership.



## CHALLENGES AND LIMITATIONS

*Navigating the bumps in the road.* We'll address the **challenges** and **limitations** of our analysis and discuss potential areas for improvement.





***Since social implications are almost unpredictable as well as unexpected events.***

- Malfunctioning
- Strikes
- Natural disasters
- New transportation methods.





# CONCLUSION

The background is a solid teal color. On the left side, there are two overlapping grey semi-circular shapes. On the right side, there is a large grey semi-circular shape. At the bottom right corner, there is a yellow semi-circular shape.

# Thanks!



A blurred background image of a meeting. In the foreground, the back of a person's head and shoulders are visible, wearing glasses and a light-colored shirt. In the background, several people are seated around a wooden table, looking towards the camera with slight smiles. A teal rectangular overlay with rounded corners is positioned in the center, containing the text 'Q & A' in white. The overall scene suggests a professional or collaborative environment.

**Q & A**