LONDON BIKE SHARE

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The bike sharing is a transportation service in which an individual can rent a bike for short term. Many system allow people to borrow a bike from dock and return to another dock of same system.

Let us explore how different factors like temperature, wind speed, humidity, season, weather and holiday affect the bike share count.

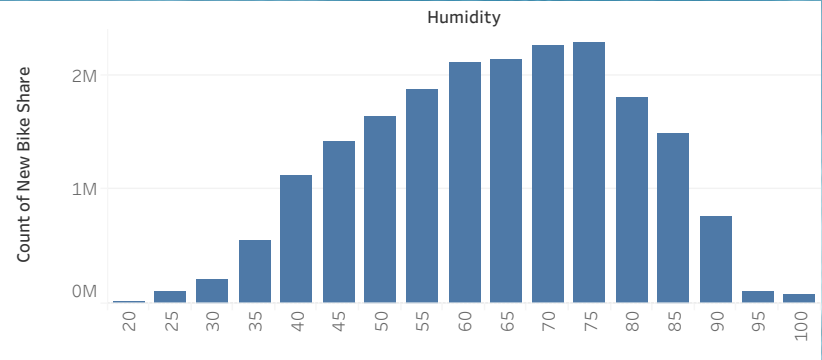Presently, there are more than 750 docking stations and 11500 bikes to hire around London.

Let us dive down deep into analysis.

LONDON BIKE SHARE

Humidity

Humidity

Count of New Bike Share (y-axis: 0M, 1M, 2M)
Humidity (x-axis: 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100)

• The bike share increase with increase in humidity. At 75% humidity, the bike share count is approx 2M.

• After 75%, it goes down sharply i:e at 100% humidity, the bike share count is only 72K.

Wind Speed

Wind Speed

Count of New Bike Share (y-axis: 0M, 2M, 4M)
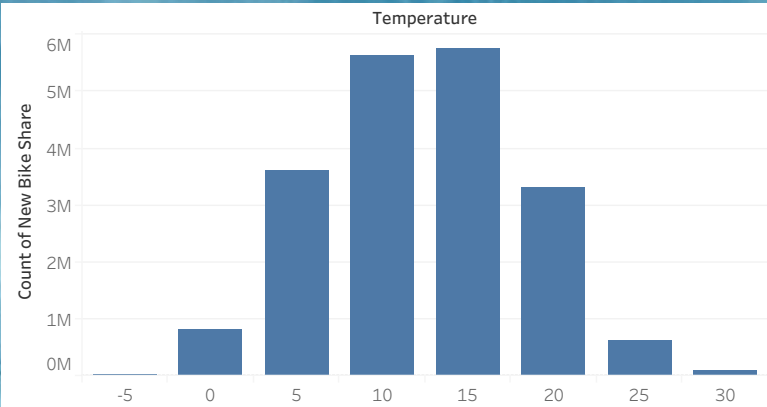(x-axis: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50)
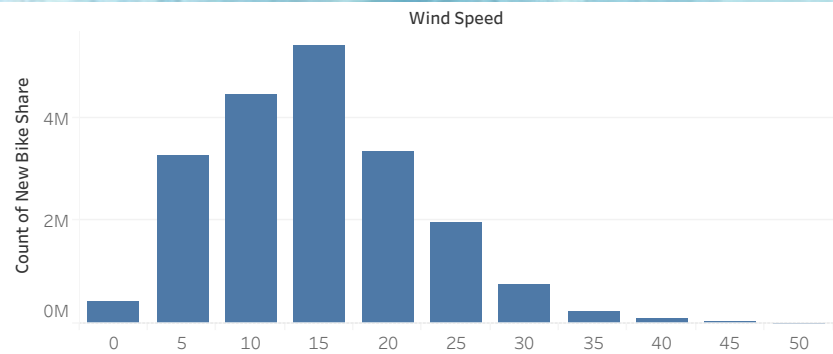
• More than 5M bike share count during wind of 15km/h.
• It tends to go down to as low as 2.1k during wind of 50km/h.
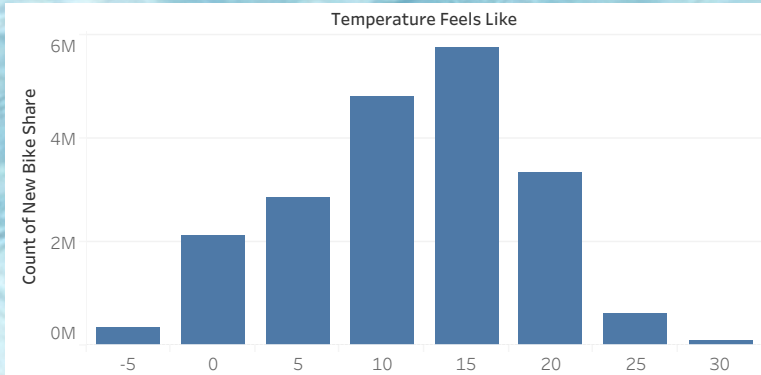• When there is no wind, bike share count is 0.4M.

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Recorded Temperature

• People prefer to ride bike at around 10°c and 15°c , as the bike share count is almost similar at 6M.

• The bike share count is fairly low at -5°c and 30°c, i:e less than 0.1M.
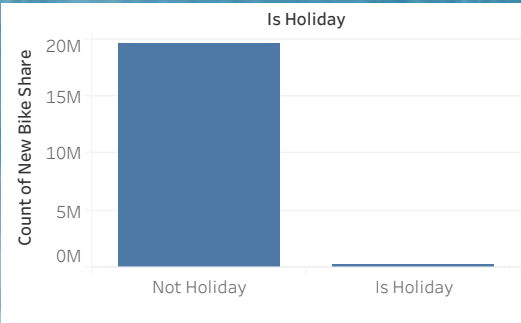
Temperature Feels Like

• Both the graph are similar in terms of numbers.

• While 15°c still has the highest bike share count but 10°c is considerable lower in count.

LONDON BIKE SHARE

Holiday

Is Holiday

• Surprisingly, people don't need a holiday to ride bike, 20M people actively riding bike on non-holidays.

Weekend

Is Weekend

• Most people like to preserve weekend for long drives or trips. Non-Weekend as usual has more bike sharing count at 15M.

Season

Season
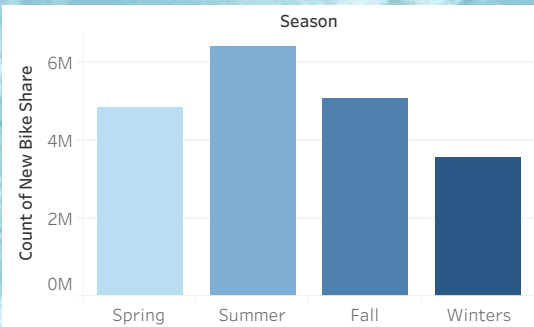
• The beautiful london summers oberserve the highest bike share at 6M, then fall and spring respectively.

Weather

Weather Code
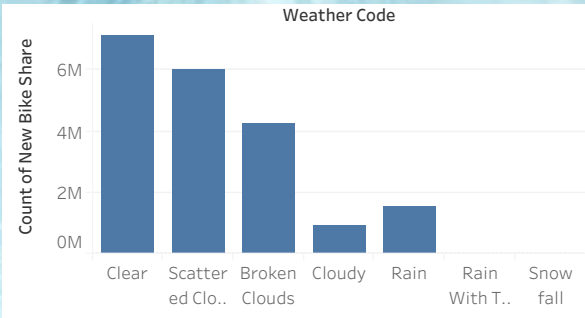
• Clear sky takes the majority of the new bike share at more than 6M.

• Interesting ly, people prefer to ride bike at scattered cloud and Broken cloud more than cloudy.
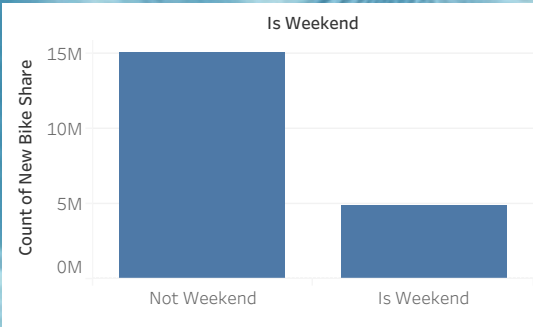
LONDON BIKE SHARE

Humidity and Wind Speed | Recorded temperature and Temperature feel.. | Holiday, Weekend, Season and Weather | Correlation Analysis | Regression Analysis | Conclusions and Insights for Investors | The End THANK YOU!

CORRELATION ANALYSIS

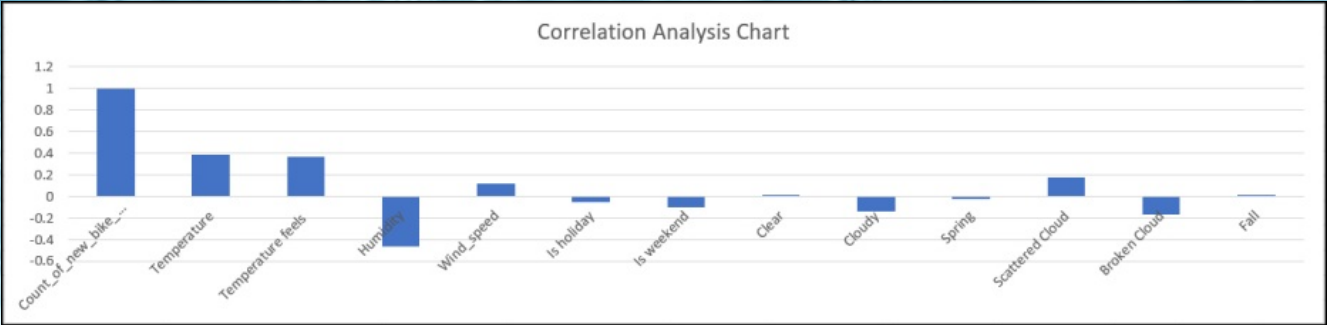|	Count of new bike shares	Temperature	Temperature feels	Humidity	Wind speed	Is holiday	Is weekend	Clear	Cloudy	Spring	Scattered Cloud	Broken Cloud	Fall
Count_of_new_bike	1												
Temperature	0.388798451	1											
Temperature feels	0.369034794	0.988344222	1										
Humidity	-0.462900965	-0.447781001	-0.403495136	1									
Wind_speed	0.116295231	0.145470972	0.088408538	-0.287789	1								
Is holiday	-0.051698301	-0.042233443	-0.040050697	0.0320676	-0.002606341	1							
Is weekend	-0.096499119	-0.005342173	-0.008510289	0.0280983	0.011479093	-0.09489787	1						
Clear	0.012929864	0.016102823	0.016217083	-0.223229	-0.221347272	0.006042142	-0.02027952	1					
Cloudy	-0.141802174	-0.100665268	-0.089268996	0.1695342	-0.072323726	-0.01167245	0.066522465	-0.224	1				
Spring	-0.021024492	-0.187822212	-0.18422697	-0.15126	0.03550039	0.085625324	0.00027554	0.0554	-0.02068	1			
Scattered Cloud	0.178668248	0.083624485	0.07294015	-0.204839	0.128399021	-0.01386135	-0.05585375	-0.406	-0.16635	-0.0197	1		
Broken Cloud	-0.1703813	-0.493651727	-0.505277738	0.2245324	0.088479725	0.043895106	0.001826018	-0.086	0.08904	-0.3342	-0.02426586	1	
Fall	0.018928997	0.058725945	0.085521318	0.150935	-0.114850387	-0.08602527	-0.00061531	-0.046	0.00492	-0.3328	0.011738806	-0.329565274	1

Correlation Analysis Chart

• The relationship between variables with New Bike Sharing suggests that temperature and temperature feels have highest correlation having values 0.38 and 0.36 respectively.

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REGRESSION ANALYSIS

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	2577.354746	86.07299975	29.943824	3.847E-192	2408.64303	2746.066461	2408.643031	2746.066461
Temperature	90.58354732	9.64484401	9.3919142	6.6029E-21	71.6786855	109.4884092	71.67868546	109.4884092
Temperature feels	-31.5586018	7.752974599	-4.070515	4.7116E-05	-46.7552098	-16.3619937	-46.75520978	-16.36199374
Humidity	-28.7794086	0.669762087	-42.9696	0	-30.0922095	-27.4666077	-30.09220949	-27.46660772
Wind_speed	-9.66208003	1.047335613	-9.225391	3.1417E-20	-11.7149629	-7.60919716	-11.7149629	-7.609197156
Is holiday	-264.222183	47.99664962	-5.505013	3.7436E-08	-358.300431	-170.143934	-358.300431	-170.1439341
Is weekend	-198.733473	15.53626004	-12.79159	2.6901E-37	-229.186102	-168.280845	-229.1861016	-168.2808449
Clear	-187.293039	19.01772665	-9.84834	7.995E-23	-224.569692	-150.016387	-224.5696915	-150.0163872
Cloudy	-67.4149353	6.797400525	-9.917752	4.014E-23	-80.7385222	-54.0913483	-80.73852225	-54.09134831
Spring	33.08121103	6.317615082	5.2363448	1.6569E-07	20.6980517	45.4643704	20.69805167	45.4643704
Scattered Cloud	48.14342642	10.05495575	4.7880297	1.6981E-06	28.4347044	67.85214844	28.43470441	67.85214844
Broken Cloud	89.41166963	9.468980206	9.442587	4.0857E-21	70.8515185	107.9718208	70.85151846	107.9718208
Fall	129.7396407	11.14051173	11.645752	3.1492E-31	107.90312	151.5761613	107.90312	151.5761613

Regression Analysis Chart

Regression Statistics	Column1
Multiple R	0.534095017
R Square	0.285257487
Adjusted R Square	0.284764589
Standard Error	917.6931637
Observations	17414

- Correlation co-efficient, multiple R value 0.53 means that the variable are correlated.
- R sqaure value 0.28 suggest that 28% of the data fits the regression model.

- Temperature humidity, wind speed, holiday, spring are lower than 0.05 which means they are statistically significant.

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CONCLUSIONS

	Bike Share Maximum	Bike Share Minimum
HUMIDITY	75%	20% and 100%
WIND SPEED	15 km/h	50 km/h
RECORDED TEMPERATURE	15°c	-5°c
FEELS LIKE TEMPERATURE	15°c	30°c
SEASON	Summer	Winter
WEATHER	Clear	Snowfall

INSIGHTS FOR INVESTORS

• Invest more during summer and fall season.

• Heavy maintainance of the bikes should be done during winters and short services during weekends.

• Technically advanced bike should be manufactured for more public involevement during Winters i:e heated seats.

• The bike should have enough mechanical strength, so that the rider feels completely safe.

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