

Trinity Newsome

Excel (formulas, notes, and solutions inside Excel file in “property data” tab)

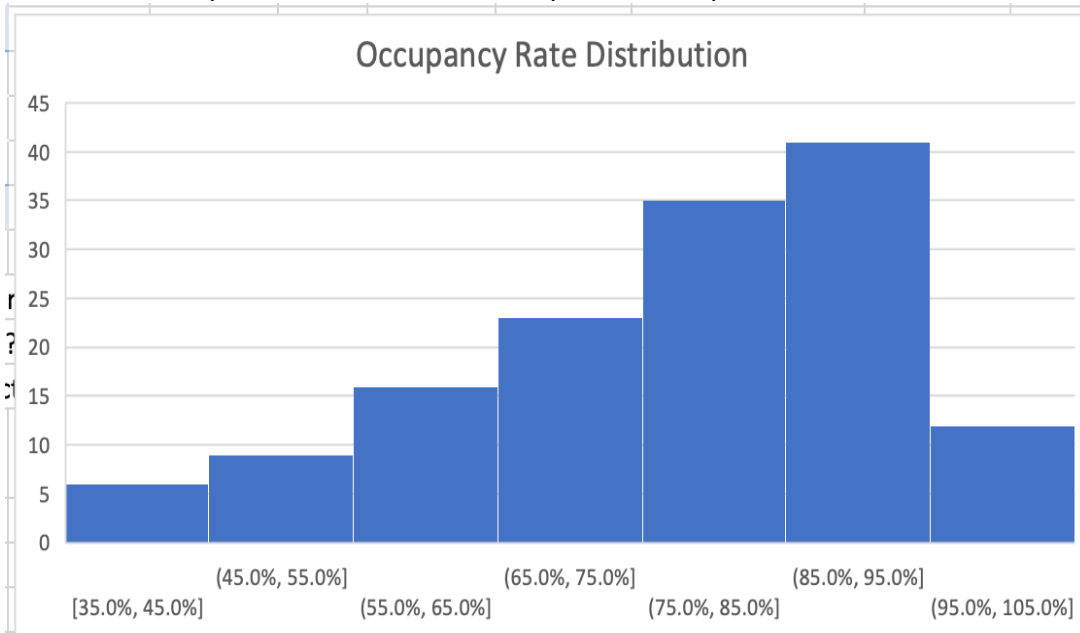
- 1) Using the “property data” tab, please create a pivot table showing the count of CBSAs and regions within the data coverage.

Sum of Property	Column Label								
Row Labels	East North Central	Mid-Atlantic	Mountain	Northeast	Pacific	Southeast	Southwest	West North Central	Grand Total
Allentown, PA				211					211
Asheville, NC		121							121
Atlanta, GA						435			435
Baltimore, MD		79							79
Boston, MA				418					418
Boulder, CO			7						7
Buffalo, NY				257					257
Charlotte, NC		543							543
Chattanooga, TN						72			72
Chicago, IL	283								283
Cincinnati, OH	92								92
Cleveland, OH	35								35
Columbus, OH	174								174
Dallas, TX							78		78
Dayton, OH	40								40
Denver, CO			8						8
Des Moines, IA								198	198
Detroit, MI	423								423
Durham, NC		76							76
Flint, MI	88								88
Grand Rapids, MI	195								195
Greensboro, NC		289							289
Hartford, CT				302					302
Honolulu, HI					28				28
Houston, TX							220		220
Kansas City, MO								125	125
Las Vegas, NV			44						44
Los Angeles, CA					51				51
Melbourne, FL						36			36
Miami, FL						332			332
Minneapolis, MN								11	11
Modesto, CA					127				127
Napa, CA					50				50
Nashville, TN						73			73
New Haven, CT				243					243
New York, NY				471					471
Norwich, CT				57					57
Oklahoma City, OK							117		117
Orlando, FL						64			64
Philadelphia, PA		474							474
Phoenix, AZ			4						4
Pittsburgh, PA				106					106
Port St. Lucie, FL						155			155
Raleigh, NC		97							97
Richmond, VA		117							117
Rochester, NY				45					45
Sacramento, CA					98				98
San Diego, CA					138				138
San Francisco, CA					181				181
San Jose, CA					83				83
Santa Rosa, CA					47				47
Sarasota, FL						1			1
Scranton, PA				104					104
Seattle, WA					269				269
St. Louis, MO								243	243
Tampa, FL						369			369
Toledo, OH	100								100
Tulsa, OK							69		69
Utica, NY				177					177
Ventura, CA					150				150
Virginia Beach, VA		356							356
Washington, DC		70							70
Winston-Salem, NC		261							261
Youngstown, OH	109								109
Grand Total	1539	2483	63	2391	1222	1537	484	577	10296

- 2) Compute the total number of open units and average occupancy rate by property status.


Property status	Sum of Open Units	Average of Occupancy
Closed	158	0.917721519
New Construction	0	0.541666667
Open	16995	0.769572922
Grand Total	17153	0.769015177

- 3) What questions arise when reporting occupancy by property status, per question #2 above?
- Why do closed properties have the highest average occupancy rate? Or any open units at all?
 - Are there any outliers or unusual values in the occupancy rates?
 - If the total amount of open units for properties under construction is 0, how are they getting a 54% average occupancy rate?
- 4) Provide the distribution of occupancy rates for open properties, including quartiles and median. Please provide a written summary of the computed results.



<u>Quartiles</u>	Values
<u>First Q</u>	0.6648551
<u>2nd Q</u>	0.8031915
<u>3rd Q</u>	0.8820856
<u>Median</u>	80.3%

- a) Most properties have high occupancy rates. 25% of the properties have occupancy rates less than or equal to 66%. 75% of the properties have an occupancy rate less than or equal to 88%. Therefore, the other 25% of properties have an occupancy rate above 88%. 50% of the properties have an occupancy rate below 80.3% , and the other 50% have an occupancy rate above 80.3%
- 5) Using a pivot table, provide the list of CBSA names with total open units between 400 and 600.

CBSA Names 	Total Open Units (400-600)
Boston, MA	587
Buffalo, NY	403
Chicago, IL	421
Detroit, MI	536
Greensboro, NC	452
Kansas City, MO	404
New Haven, CT	431
Tampa, FL	490
Grand Total	3724

SQL

- 1) Write a query to show CBSAs by 2020 to 2022 year-over-year growth rate, ranked from the lowest to the highest.

```
-- 1) Write a query to show CBSAs by 2020 to 2022 year-over-year growth rate,
-- ranked from the lowest to the highest.
-- YOY = ((Current year value - Previous year value) / Previous year value) * 100
-- null values??
SELECT CBSA, ((Rent_2022 / Rent_2020) - 1) * 100 AS YOY_Growth_Rate
FROM Rates_table
WHERE Rent_2020 IS NOT NULL AND Rent_2022 IS NOT NULL
ORDER BY YOY_Growth_Rate ASC
```

- a. `SELECT CBSA, ((Rent_2022 / Rent_2020) - 1) * 100 AS YOY_Growth_Rate
FROM Rates_table
WHERE Rent_2020 IS NOT NULL AND Rent_2022 IS NOT NULL
ORDER BY YOY_Growth_Rate ASC`

	CBSA	YOY_Growth_Rate
1	Durham, NC	0.8994082840236617
2	Detroit, MI	1.0993693540139793
3	Cincinnati, OH	1.3002097112437605
4	Boulder, CO	1.399380804953565
5	Des Moines, IA	1.500778951012638
6	Grand Rapids, MI	1.6006156213928424
7	Kansas City, MO	1.6997971602433992
8	Allentown, PA	1.7000000000000126
9	Greensboro, NC	1.7001921844971069
1...	Hartford, CT	1.7996476214447554
1...	Honolulu, HI	1.7997750281214753
1...	Cleveland, OH	1.8005761843790102
1...	Denver, CO	1.9001047851903596

b. 27 rows Choose SQL Language Average: 2.278 Count:

- 2) Write a query that shows the average occupancy rate for open properties for the top 5 CBSAs.

-- 2) Write a query that shows the average occupancy rate for open properties for the top 5 CBSAs.
`SELECT TOP 5 [CBSA_Name], AVG(CAST(REPLACE([Occupancy], '%', '') AS FLOAT)) AS Avg_Occupancy_Rate
FROM Property_table
WHERE [Property_Status] = 'Open'
GROUP BY [CBSA_Name]
ORDER BY Avg_Occupancy_Rate DESC;`

- a) `SELECT TOP 5 [CBSA_Name], AVG(CAST(REPLACE([Occupancy], '%', '') AS FLOAT))
AS Avg_Occupancy_Rate
FROM Property_table
WHERE [Property_Status] = 'Open'
GROUP BY [CBSA_Name]
ORDER BY Avg_Occupancy_Rate DESC;`

b)

	CBSA_Name	Avg_Occupancy_Rate
1	Boulder, CO	100
2	Baltimore, MD	100
3	Honolulu, HI	100
4	Flint, MI	95.8
5	Chattanooga, TN	92.8

- 3) Write a query that shows top 10 open properties for Majority AL ranked by the number of open units.

-- Write a query that shows top 10 open properties for Majority AL
 -- ranked by the number of open units.

```
SELECT TOP 10 *
FROM Property_table
WHERE [Property_Type] = 'Majority AL' AND [Property_Status] = 'Open'
ORDER BY [Open_Units] DESC
```

- a.

```
SELECT TOP 10 *
FROM Property_table
WHERE [Property_Type] = 'Majority AL' AND [Property_Status] = 'Open'
ORDER BY [Open_Units] DESC
```

	Property_ID	CBSA_Code	Property_Type	Property_Status	Open_Units	Occupancy	CBSA_Name	Region
1	92	17140	Majority AL	Open	299	72.2%	Cincinnati, OH	East North Centr
2	73	34980	Majority AL	Open	286	73.4%	Nashville, TN	Southeast
3	28	46520	Majority AL	Open	211	100.0%	Honolulu, HI	Pacific
4	75	14460	Majority AL	Open	205	79.5%	Boston, MA	Northeast
5	4	38060	Majority AL	Open	170	77.1%	Phoenix, AZ	Mountain
6	74	37980	Majority AL	Open	143	88.8%	Philadelphia, PA	Mid-Atlantic
7	13	42660	Majority AL	Open	129	52.7%	Seattle, WA	Pacific
8	69	46140	Majority AL	Open	121	53.7%	Tulsa, OK	Southwest
9	77	10900	Majority AL	Open	120	79.2%	Allentown, PA	Northeast
10	96	10900	Majority AL	Open	113	88.5%	Allentown, PA	Northeast

b.