**PROPERTY SALE ANALYSIS REPORT**

**1 Basic insights**

* No. of feature=8
* No blank values available in any column
* Number of unique values in property ID=0
* Number of unique values in sale date=312

**2 Descriptive Summary**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Parameter* | *Sale Date* | *Sale price* | *Square Footage* | *Year Built* | *Previous Sale Price* |
|  |  |  |  |  |  |
| Mean | 44784.2188 | 553817.7327 | 2731.1062 | 1960.0824 | 470565.9483 |
| Standard Error | 7.44776682 | 3685.399096 | 18.23118562 | 0.49440454 | 3469.560844 |
| Median | 44792 | 554081.65 | 2696 | 1961 | 470763.66 |
| Mode | 44535 | #N/A | 1136 | 1980 | #N/A |
| Standard Deviation | 526.636643 | 260597.0692 | 1289.139498 | 34.9596803 | 245335.0001 |
| Sample Variance | 277346.153 | 67910832492 | 1661880.646 | 1222.17925 | 60189262265 |
| Kurtosis | -1.18208007 | -1.202551753 | -1.193864718 | -1.1926916 | -1.179060818 |
| Skewness | -0.01134171 | -0.002712339 | 0.036748189 | -0.006352 | 0.012331502 |
| Range | 1826 | 899612.68 | 4499 | 120 | 849851.87 |
| Minimum | 43874 | 100343.5 | 501 | 1900 | 50071.91 |
| Maximum | 45700 | 999956.18 | 5000 | 2020 | 899923.78 |
| Sum | 223921094 | 2769088664 | 13655531 | 9800412 | 2352829742 |
| Count | 5000 | 5000 | 5000 | 5000 | 5000 |
| Largest(1) | 45700 | 999956.18 | 5000 | 2020 | 899923.78 |
| Smallest(1) | 43874 | 100343.5 | 501 | 1900 | 50071.91 |
| Confidence Level(95.0%) | 14.6008899 | 7224.998817 | 35.74112087 | 0.96924977 | 6801.861166 |

**3. Feature wise Interpretation**

* Standard deviation in all the columes is found less than the mean, so we can say that tha data consists of less variance
* Skewness for all the columns falls within excellent range i.e. -1 to +1
* Median in all the columns is greater than mean except for “Year built” column hence all the data columns except “year built” are positively skewed.
* Kurtosis values in all the columns are less than 3, hence we can say that the data consists less outliers.

**4. Transformations**

* Extracted Year, Month, Quarter, Week and Day from sale date column and sorted them in ascending order to analyze better

**5. Insights and patterns**

* Considering quarter wise sale in various locations it seems that most sale is happened in first quarter throughout all years
* Considering second chart we can conclude that on average every property type has almost equal square footage area
* Highest property sale was on 16.03.2023
* Most locations sale happened in second quarter
* Most sale was done in second week of year throughout the data
* Highest sale price difference than previous sale price was highest for built year 1968

6. Recommendations

* As data shows that highest property sale occurs in second quarter, we can start promoting sale from 1st quarter and giving discounts or season offers.