HW#4 Insights

**What is the current number of competitors' stores per DMA/Location?**

The LA region has the most stores, with seven stores in total. And the Orlando-Dayton Brach-Melbourne FL has the least number of stores with one store.

**Which DMA has the best and worst total sales and the best and worst total sales per square foot?**

LA has the most significant total sales, which makes sense because there are seven stores in Los Angeles. The highest total sales per square foot are in Austin, which has three stores with low square footage. The DMA with the lowest total sales in Kansas City, with two stores; Kansas is not as populated as some other cities, which explains why the average weekly sales are low. The DMA with the lowest total sales per square foot is Denver, with three stores. Denver's largest store (Store #32) has the lowest total weekly sales per sqft, which hurts its total sales per square foot across all three stores.

**Which DMA has the best and worst average weekly sales and the best and worst average weekly sales per square foot?**

Houston has four stores, the DMA with the highest average weekly sales. The DMA with the highest average sales per square foot is Austin, with three stores. The DMA with the lowest average weekly sales is Kansas City, with two stores. The DMA with the lowest average sales per square foot is Denver, with three stores. Regarding average weekly sales, the number of stores does not affect the average weekly sales. There are other issues.

**Which store has the best and worst total sales, best and worst total sales per square foot, and where are they located?**

The store with the most sales is Store 20, located in Tampa-St. Pete. The store with the least sales is Store 33, located in Atlanta. The store with the most sales per square foot is Store 43 in San Diego. The store with the least sales per square foot is Store 9, located in Dallas-Ft Worth.

**What stores and locations have the best and worst average weekly sales?**

The store with the highest average sales is Store 20, in Tampa-St. Pete. The store with the lowest average sales is Store 5 in Austin. The store with the highest average sales per square foot is Store 43 in San Diego. The store with the lowest average sales per square foot is Store 9, located in Dallas-Ft Worth.

**What Holiday has the highest mean sales?**

Thanksgiving has the highest mean sales, and Christmas has the lowest.

**How do the holidays affect sales? What are the top 5 DMA's for each Holiday per average Sale? What are the worst 5 DMA's for each Holiday?**

Across all the holidays and non-holiday weeks, the five top locations are Houston, Orlando-Daytona Brach-Melbourne, and Tampa-St. Pete, Philadelphia (Philly), and Cleveland-Akron. These are the only locations that are ever in the top five. These stores generate many sales. The Orlando-Dayton Brach-Melbourne region only has one store. It has the second-highest average weekly sales across all holidays and non-holidays weeks, except for Christmas week, where the store has the highest average sales. Orlando's average weekly sales per square foot are outside the top five DMA's for the highest average sales per square foot. The store is fifth in lowest average weekly sales for the Super Bowl and Labor Day. Austin has the best average sales per square foot for non-holidays. All of Austin's stores are low square feet. Across all the holidays and non-holiday weeks, the five lowest average weekly sales rotate between these DMA's: Kansas City, Salt Lake City, Austin, Denver, San Diego, and Charlotte. Atlanta's four stores have the highest square footage, severely lowering its average weekly sales per square foot.

**How do the holidays affect sales? What are the top 5 stores for each Holiday? What are the worst five stores for each Holiday?**

Across all the holidays and non-holiday weeks, the stores and locations between Houston, Dallas-Ft. Worth, Tampa-St. Pete, Los Angeles, and Cleveland-Akron. These DMA's have at least one other store, which could be doing better. Across all the holidays and non-holiday weeks, the four least favorable stores were in Kansas City, Salt Lake City, Austin, Atlanta, and Denver. One store in Dallas-Ft. Worth and one in Chicago had the fifth lowest sales during the Super Bowl and Labor Day, respectively. The stores with the best average sales per sqft foot were smaller than those with the lowest average sales per square foot. For example, the highest average weekly sales per square foot were store 43, 41,062 square feet, versus store 9, which was the lowest, at 125,833.

**How well is a city supported by the number of competitor stores per location?**

With the locations with other lapping locations, I found out which stores better support a city per consumer unit (in thousands). Based on this information, the cities least supported by stores are LA (7), Philadelphia (2 stores), and Chicago (3 stores). The most supported cities are Denver (3 stores), Atlanta (4 stores), and Tampa (2 stores).

**R Programming References**

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