

Invesco & XYZ Corp. - Research, Results, & Recommendations

Dorian Merriewether & Zachary Tabor

University of North Texas

Geography 4230: Location Intelligence

Dr. Murray Rice

April 23, 2019

Problem Statement

XYZ Corporation needs to identify the five most optimal locations for their distribution network to be able to service the four counties that make up DFW in a 20 minute delivery time. These location allocation decisions will be based upon prioritizing markets that hold XYZ Corp's. most lucrative customers, ensuring the longevity of the business, and finding optimal facilities. Invesco is a real estate investment company that is interested in investing in industrial real estate within DFW with the goal of long term asset appreciation. Invesco is interested in our analysis for XYZ Corp. as it would help them understand why companies like XYZ Corp. find certain areas more optimal for location over others. Invesco is also specifically interested in the identification of specific areas with the greatest potential for returns on their possible investments in DFW.

Analytical Choices

The first step in our analytical process was to determine the location of XYZ's two target markets they want to prioritize. These markets consist of two demographic segments, one being an older affluent population with a high disposable income, and the other being a younger population with less disposable income closer to the national average, a higher level of technology use, and a positive financial and career track. We chose to do the bulk of our analysis using Business Analysis Web App (BA Web App) as this program has the best publicly available data as well as the most applicable analysis features. We first generated a SmartMap for each target market, this consisted of selecting demographic variables that would separate each market from the rest of the population. For the affluent market we set the program to select census tracts that held high percentages of the Baby Boomer population, home values above \$300,000, life insurance expenditures above \$600 a year, LifeMode group 1, and travel expenses above \$3,000 a year. We selected the individual percentages and values of our variables to amounts that would depict the affluent demographic in concentrations capable of being prioritized in our site selection process. We repeated the same process for the younger demographic using the parameters of a household income from \$30,000-65,000, percentage of personal purchases via internet in the last 30 days, percentage of population with a bachelor's degree, and median age between 20 and 35. To confirm the results from our SmartMaps we then mapped the location of the ESRI tapestry segments that matched the demographics of our two target markets, Affluent Estates: Top Tier and Midtown Singles. After identifying where our target market is located, we then began the site selection process. Once we realized that servicing the entire DFW area in a 20 minute drive time from five distribution centers was impossible, we began market research to decide which demographic to prioritize. This yielded the result that even though the younger demographic has a high rate of technology use, the older affluent demographic has a higher rate of internet purchases, leading to the conclusion that they are the market that should be prioritized. Using CoStar and BA Web App's drive time ring feature, we identified five sites that balance prioritizing this affluent demographic, and partially servicing the younger demographic, while still maximizing service area. We set the drive time rings to account for traffic at Monday at 8pm, as this is the peak time for online purchases (Zhang, 2018). We also accounted for population growth to ensure longevity and considered the location of census tracts holding the highest percentages of the population spending over \$500 on internet purchases in the last year. This analysis satisfies the requests of XYZ Corp. and provides Invesco with insightful information on where distribution companies want to locate. To clearly visualize the areas Invesco should take into consideration in their DFW investment decisions, we then highlighted areas containing clusters of industrial real estate around the optimal sites we selected. To add another layer of analysis we calculated the average percent of property value increase in the last eight years for five sites per highlighted area.

Results

Our analysis yielded some very crucial results for XYZ Corp., as well as some very insightful results for Invesco. The first major findings of our in depth analysis produced the locations of XYZ Corp.'s target markets (see Figures 1 and 2 below).

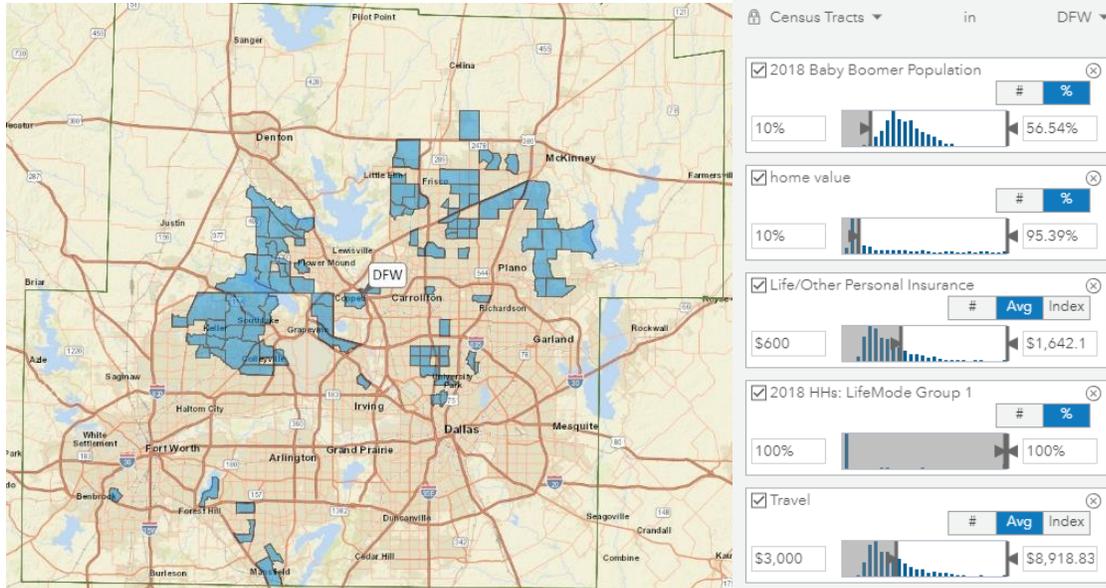


Figure 1: Map of Affluent Market Locations by Census Tract

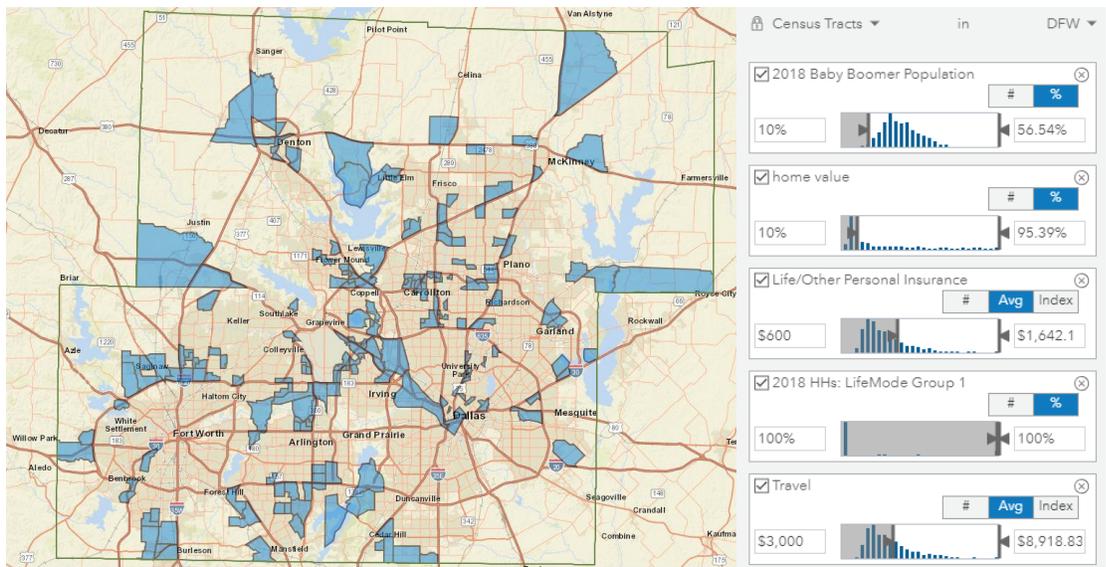


Figure 2: Map of Millennial Market Locations by Census Tract

By analyzing the figures above we were able to exploit the concentrations of our target markets to the benefit of XYZ as they aim to prioritize them in the location allocation process. Once we began the site selection process, we came to the conclusion that given XYZ Corp.'s five site model and 20 minute delivery window, complete coverage of DFW is unattainable. This led us to the decision that one market must be prioritized over the other. After undergoing extensive market research we came to the conclusion that the older more affluent demographic were more prone to online purchases, resulting in them being XYZ Corp.'s optimal market (Hwong, 2018). With this in mind we selected five sites that balanced market prioritization and total area coverage (See Figure 3).

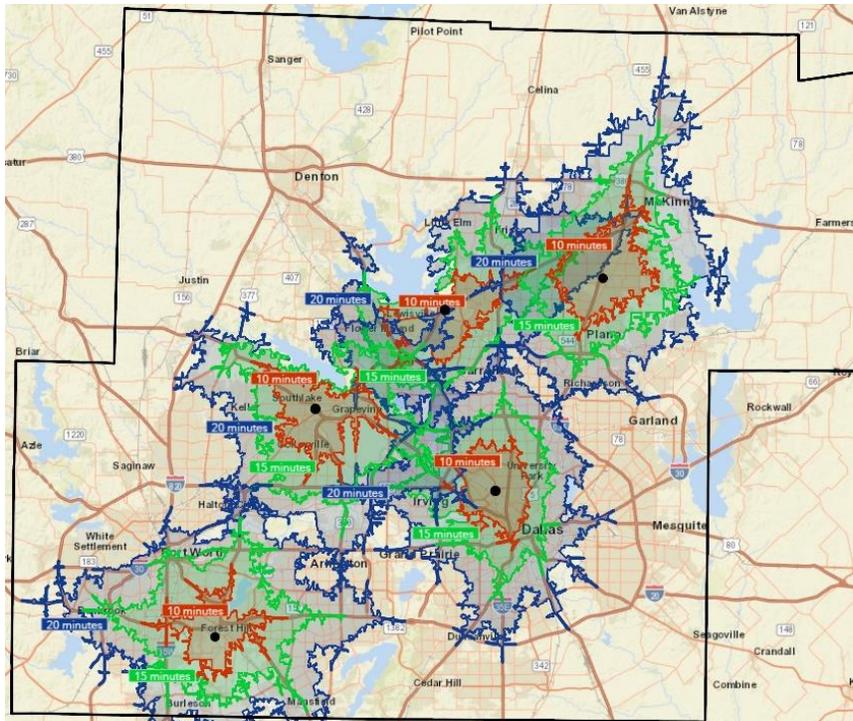


Figure 3: Map of Five Optimal Sites and Drive Time Rings.

To account for peak traffic drive time limitation, we also set the drive time rings to account for traffic on Monday at 8AM but, the difference in coverage is negligible. To provide further evidence for our site selection decisions, we produced a series of choropleth maps depicting other factors that would positively affect distribution companies locating near our selected sites (see Figure 4 and 5).

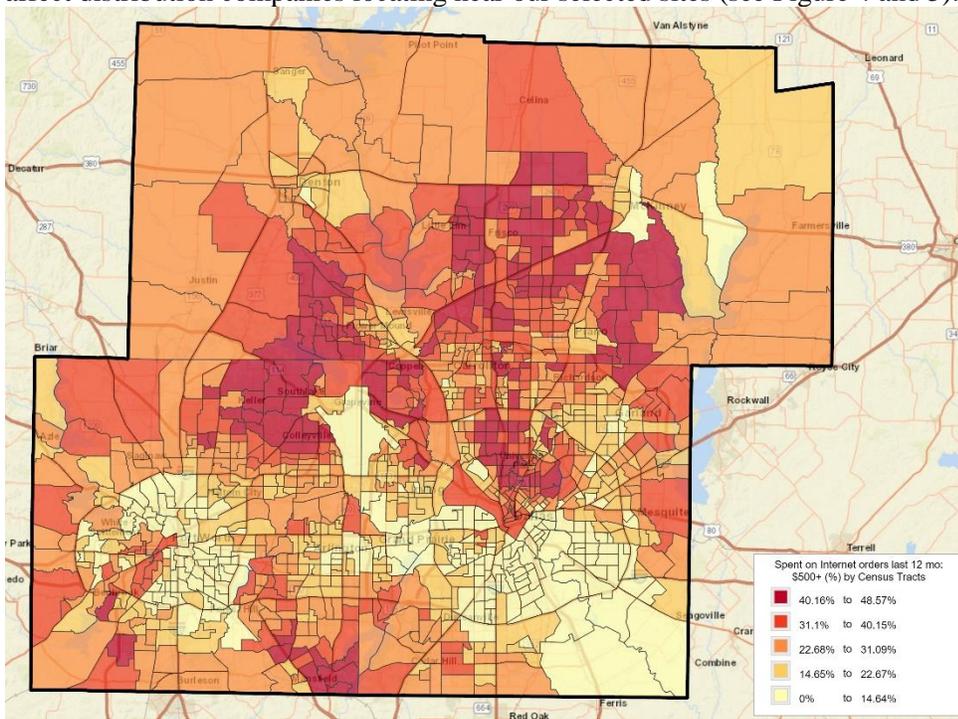


Figure 4: Money spent on internet purchases 500+ in the last 12 month.

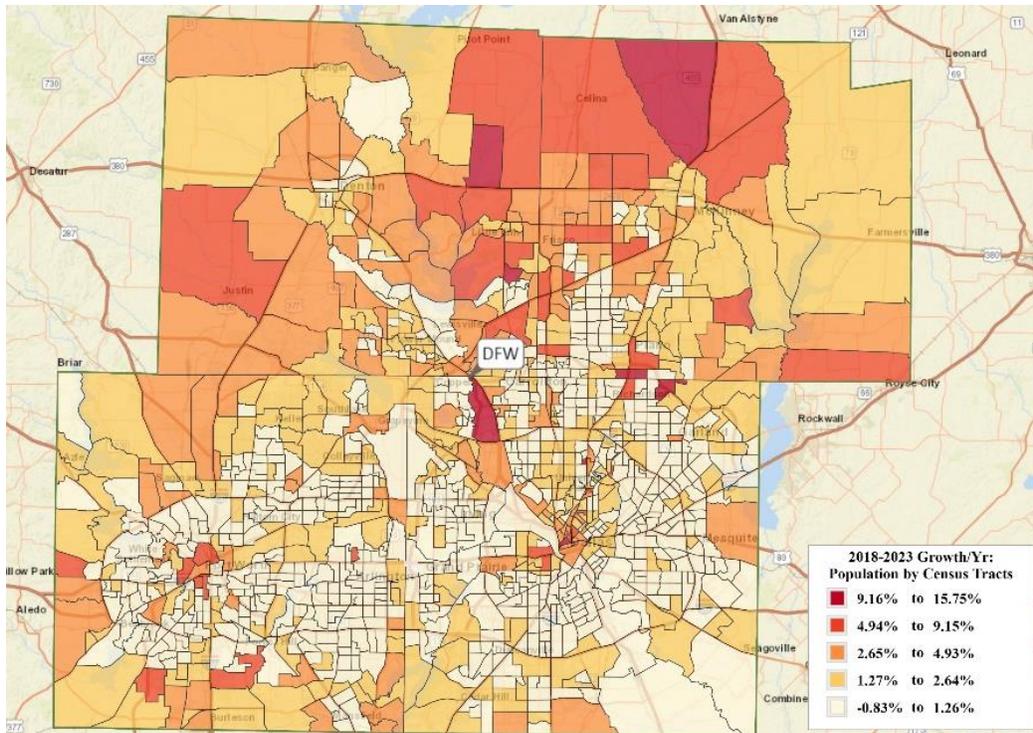


Figure 5: 2018 - 2023 population growth by census tract.

This evidence not only provides further support for our site selection decisions, but also benefits Invesco as it depicts characteristics that the average distribution company takes into account when locating in the DFW area. This allows them to use this info so that they can then use this information to identify the areas to capitalize on that hold the greatest potential for long term asset appreciation. To clearly visualize the areas with the greatest potential for long term asset appreciation, we highlighted the census tracts adjacent to our selected sites that held significant clusters of industrial real estate (see Figure 6).

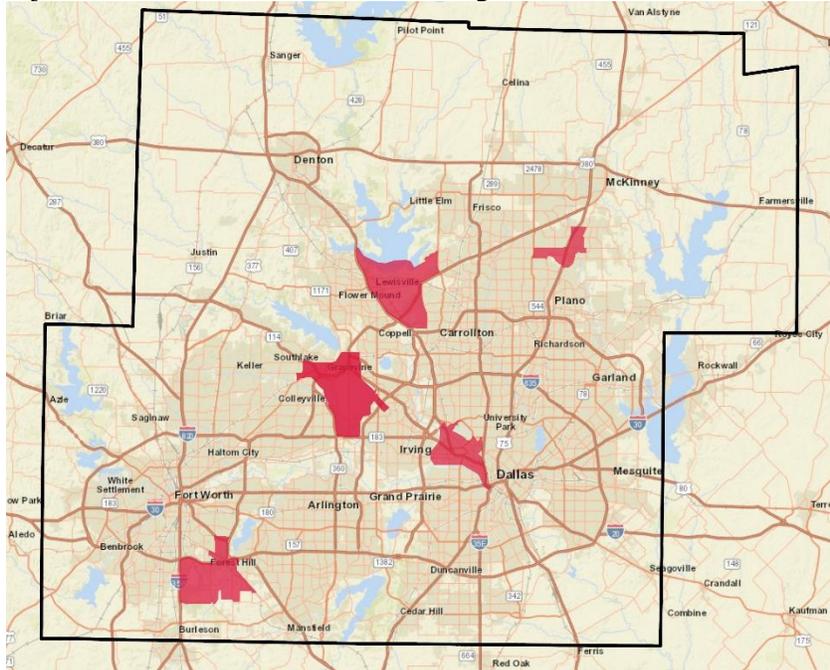


Figure 6: Map of Areas of Interest to Invesco

To provide Invesco with evidence of these areas have a high potential for long term asset appreciation, we calculated the average percentage of property value increase over the last eight years for five properties selected at random from each highlighted area (see Figure 6). The highlighted near Allen had a 48% average increase, the area near The Colony had a 129% average increase; the area near Dallas had a 67% average increase; the area near Grapevine had a 323% average increase; and the area near Fort Worth had a 58% average increase.

Recommendations

The results of our analysis should be applied in different ways for XYZ Corp. and Invesco. XYZ Corp. should strongly consider acquiring our recommended sites to build their DFW logistics network, as these sites are optimal for their goals and will promote success in any distribution company. They should also consider Collin County for any future expansion, as it has the largest growth of their optimal market. Invesco should view the analysis we performed for XYZ Corp. as a study into what the average distribution company will be considering when locating in the DFW area. This information is pertinent as it provides a view into the thought process of a distribution company's location allocation team. Allowing Invesco to exploit this knowledge to their benefit in their real estate investment business model. As well, the areas we highlighted are optimal for any distribution company, these area would draw companies and promote business success causing property value to appreciate as potential tenant companies prosper with the growing DFW market. For these reasons we recommend Invesco investigate acquiring property in these areas for returns on long term asset appreciation.

References

Hwong, Connie. (2018). The E-Commerce Ecosystem: Who Is The Online Shopper?; Retrieved from <https://www.vertoanalytics.com/the-e-commerce-ecosystem-who-is-the-online-shopper/>

Zhang, Jia. (2018). Trends: When Do People Shop Online?; Retrieved from <https://blog.workarea.com/trends-when-do-people-shop-online>