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April 22, 2019

GEOG 4230

Dr. Rice

Phase 2 Report: Invesco Logistical Analysis for XYZ Corporation

Problem Statement:

Invesco a global investment firm is requesting market research to be performed for a client of theirs called XYZ Corporation. XYZ Corporation specializes in rapid transportation services that offer 1- hour deliver services of orders placed by customers from large retailers and e-commerce businesses. This target 1-hour delivery from the time an order is placed allows for a 20-minute drive time delivery window to a customer's door step. XYZ Corp. is looking to establish operations in the D-FW region by developing a network of up to five distribution centers in D-FW.

A this present time XYZ Corp. does not own or lease any real state in the D-FW region, they are looking to acquire five disruption locations within this region that maximizes service coverage of the D-FW region. At the request of XYZ Corp. analysis will be performed for the largest populated counties in D-FW, Tarrant, Dallas, Collin and Denton counites will be used in this analysis. While XYZ Corp. would like to service this entire region, primary focus will be placed on communities that meet a specific market profile which is deemed most profitable for XYZ's goals. XYZ has also expressed interest in knowing if a network can be established with less than five distribution centers.

Analytical Choices & Details - Methods and Data:

Methods:

Maptitude and Esri was used as the main tools for mapping and data input. They are both extremely flexible and robust mapping software that offer a wide range of tools which allowed for isolation of potential areas in each county given the parameters set by XYZ Corp and Invesco. CoStar was used for site and facility location; Costar offers a powerful database of real estate on the market locally and the around the world. This database was invaluable in finding locations and facilities that best match requested criteria. Using these software in combination with the market profile suggested by Invesco for potential customers were able to narrow down specific communities that fell within the suggested ranges and the requested facility parameters from XYZ Corp.

Drive-time rings were used to find optimal coverage area within the given 20 minute window from the point of the distribution center. This method will allow us to see if the chosen facility location is reaching the specific communities found in this analysis for it to be worth

investing in. Location-allocation was also used to identify the best location in a wide selection pool or potential sites to be selected.

Data:

Working with the parameters given by XYZ Corp and considerations suggested by Invesco this analysis focused on the D-FW region, given this region being so large spanning 12 counties. We will limit our search to Denton, Tarrant, Dallas and Collin counties, it is these four counties that are home to almost 6.5 million people which is the majority of the D-FW's population. Within each county we isolated site locations that fit into criteria XYZ Corp has listed for distribution centers. Characteristics for the physical location are a facility that is a minimum of 50,000 square feet, or a parcel of land that would accommodate something that size or larger. For a facility already in place considerations such as zoning for commercial use must be taken into account as these facilities will more than likely be in close proximity to residential regions. The facility must have the means and framework in place such as loading docks which will receive large amounts of freight daily. Parking for facility staff that will be adequate to house not only workers personal vehicles but a wide range of transportation units such as panel vans to 18-wheelers.

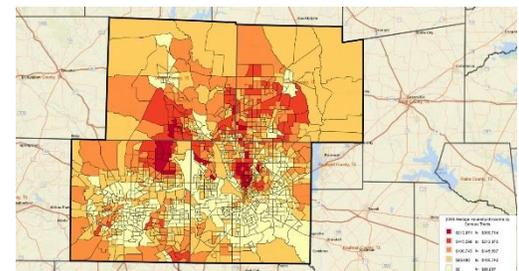
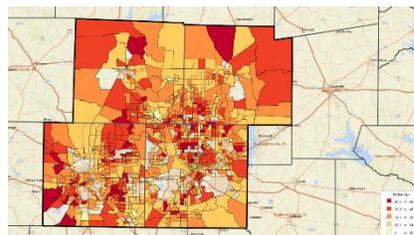
With market profile and demographic suggestions from Invesco a market profile of the ideal consumer was established. This market profile would have above average incomes from the national average and have higher than average spending patterns than the national average. Age group and consumer habits suggested by Invesco aided in further narrowing down communities within each county, these communities offer XYZ Corp the highest potential profit.

Two specific age groups were used to find the best possible locations for XYZ Corp, an age group of persons 40-50 years who are most likely to have the highest level of disposable income while still being in touch with trends with technology and the willingness to use it. An additional age group of 20-30-year-old individuals was also used, this age group more likely to use technology and already see Ecommerce as a norm, do not have the same level of disposable income as the a 40-50 years of age group. Some common characteristics shared by both groups is their spending habits on consumer goods, we are looking for trends in these and groups and the communities they live that show higher than average spending on goods and services.

Results:

Income and Age Permeameters

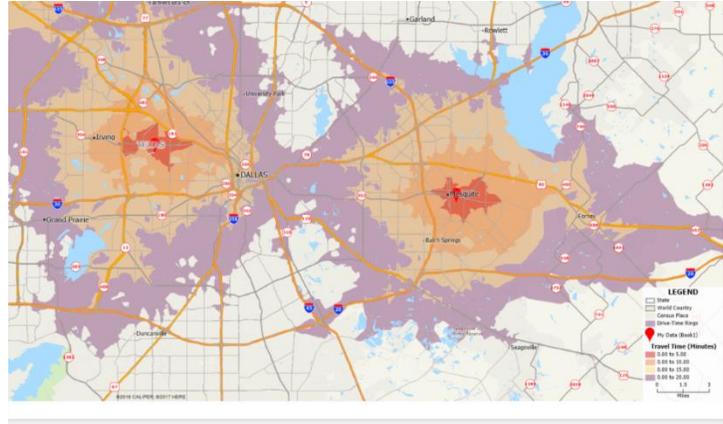
The images below show the average household income and targeted age groups for Dallas, Collin, Denton and Tarrant counties. We can determine that that communities that best suite Invesco's market profile are in close proximity to one another, this allows us focus on facilities that are located in these areas that are shaded in red. It must be noted that communities that fall within the age groups are most spread out than the parameters for income level. Even with this



spread we area still able to see a trend of the most optimal locations are located close to one another.

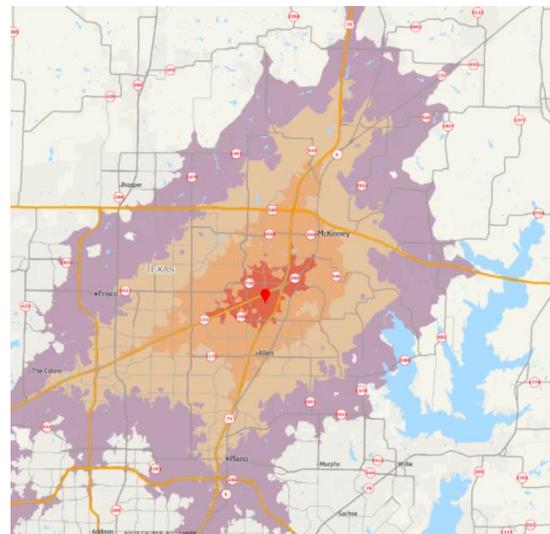
Dallas County

Dallas county provides us two locations. Dallas has the largest overall population and second highest density for selected market profile which allows us to be more flexible when choosing between either site, though it would be advantageous to select the sit to the west which would allow for some overlap in service area from neighboring counties Dallas is the largest of all the counties and the densest regarding residential locations. A limiting factor here is the constant development Dallas experiences, with a mixture of road construction and an already taxed highway system that increases traffic at peak times this places XYZ in a situation where the 20-minute drive window may not be met regardless of which site was chosen.



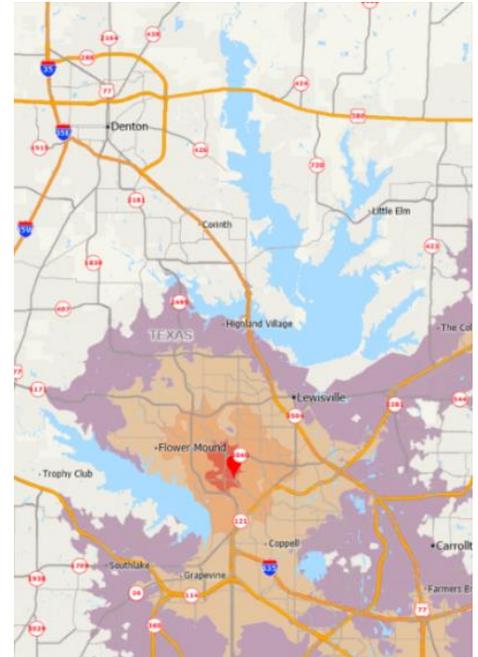
Collin County

Collin county with its close proximity to both Dallas and Denton counties, provides some level of flexibility. This point was selected for maximum coverage, placing the cities of McKinney, Plano, and Frisco within 20-minute coverage. Collin county also favors a higher cost of living and constant growth of its cities. With large corporations like Toyota calling Plano home, this will play into future development of business and residential locations that would be likely to use a shipping service.



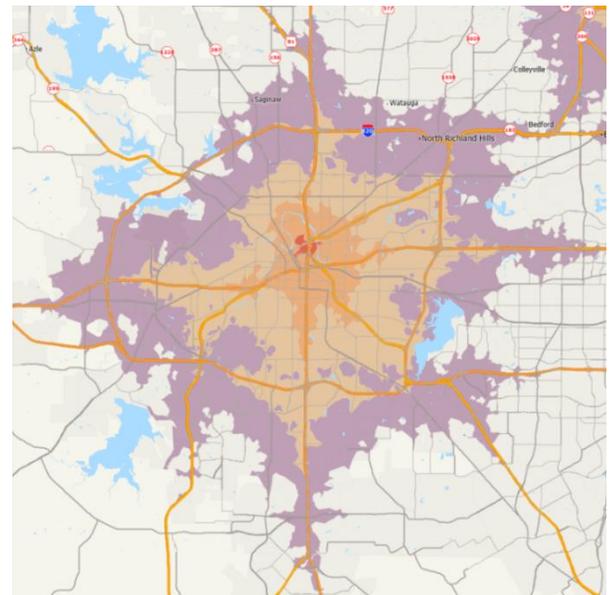
Denton County

Denton County brings a unique set of challenges, while searching for site locations, trouble was found finding a location that served the greater Denton area. A location was found in the Flower Mound area which serves populated areas like Lewisville, Highland Village, and Grapevine. There is still a large gap for the city of Denton itself. The city of Denton is home to two Universities that each have large student populations. This population could be looked at from being separate, from the population that live there year around. Consideration needs to be made of the new development in Denton in areas like Sandbrock Ranch that is home to a high-income demographic. A choice will need to be made hear by XYZ Corp. to flex neighboring counties such as Tarrant and Collin counties' coverage areas over to Denton at a potential cost to the 20-minute drive window.



Tarrant County

This location facility would be able to reach all the inner city of Tarrant county and most of its periphery, this gives a fairly good idea on how a centrally placed facility would fair. Invesco's chosen market profile lies within the 20-minute window specified by XYZ Corp. Taking a look into the current development trends in Tarrant county, with raid growth of the Alliance Town Center Area that boost growth for new affluent residential areas this site accounts for these development trends and would future proof profit as development in this area continued.



Conclusion and Recommendations:

The results from this analysis show that a five-facility network is achievable but not optimal. There are gaps in service for the greater Denton County and Dallas would not benefit from having two facility locations within it's county. Eliminating the most eastern site in Dallas county, a four-facility network would be more then adequate to service the targeted market

profile suggested by Invesco while still meeting the 20-minute service goal of XYZ Corp. It's recommended that Invesco speak with XYZ Corp about the limited potential facilities in Denton County and suggest that XYZ Corp hold off on a facility in that county. Dallas and Collin County share some overlap with Denton county and would be able to flex their service area into the southern part of Denton.