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Geog 4230

XYZ Logistical Analysis Phase 2

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Scenario

The XYZ Corporation is a rapid delivery services provider. They are subcontracted by retail and e-commerce companies to fulfill orders. XYZ has a one hour window to fulfill deliveries. This includes picking the order, packing the order, and delivering the order. It takes approximately thirty minutes to pick and pack the order. This leaves a thirty-minute window of delivery or drive time. They are being tasked with fulfilling the last mile logistics in the delivery process. Last mile logistics is where products are shipped either by small parcel or package carriers. This enables customers to receive their products faster than traditional delivery and is more cost effective for the company. XYZ's competitors such as Amazon and other large e-commerce companies promise instant or same day delivery which shows how effective last mile logistics can be at benefiting a company. XYZ is a new company and is looking to join the market in the Dallas- Fort Worth Metropolitan area. They will need to construct their entire distribution infrastructure from the ground up. They must also find out where their target customers live. XYZ's target customers are more affluent middle aged consumers and young educated consumers with promising careers. XYZ will look at the locations that best serve these target customers. They also want to have four to five distribution centers that can service every customer in the Dallas-Fort Worth Metropolitan area in a maximum thirty-minute time frame.

These distribution centers will need to be located within industrial zoning areas and have a minimum square footage of 50,000 square feet.

Questions to be Solved

Who are XYZ's target customers and where do they reside within the Dallas-Fort Worth Metropolitan Area? Where are the locations that are best suited to service their customers within the thirty-minute delivery window that have the appropriate zoning and can accommodate a minimum of 50,000 square feet? Do these locations offer best location in terms of site and situation? Are these facilities located in areas where they will provide the best service to XYZ's target customers?

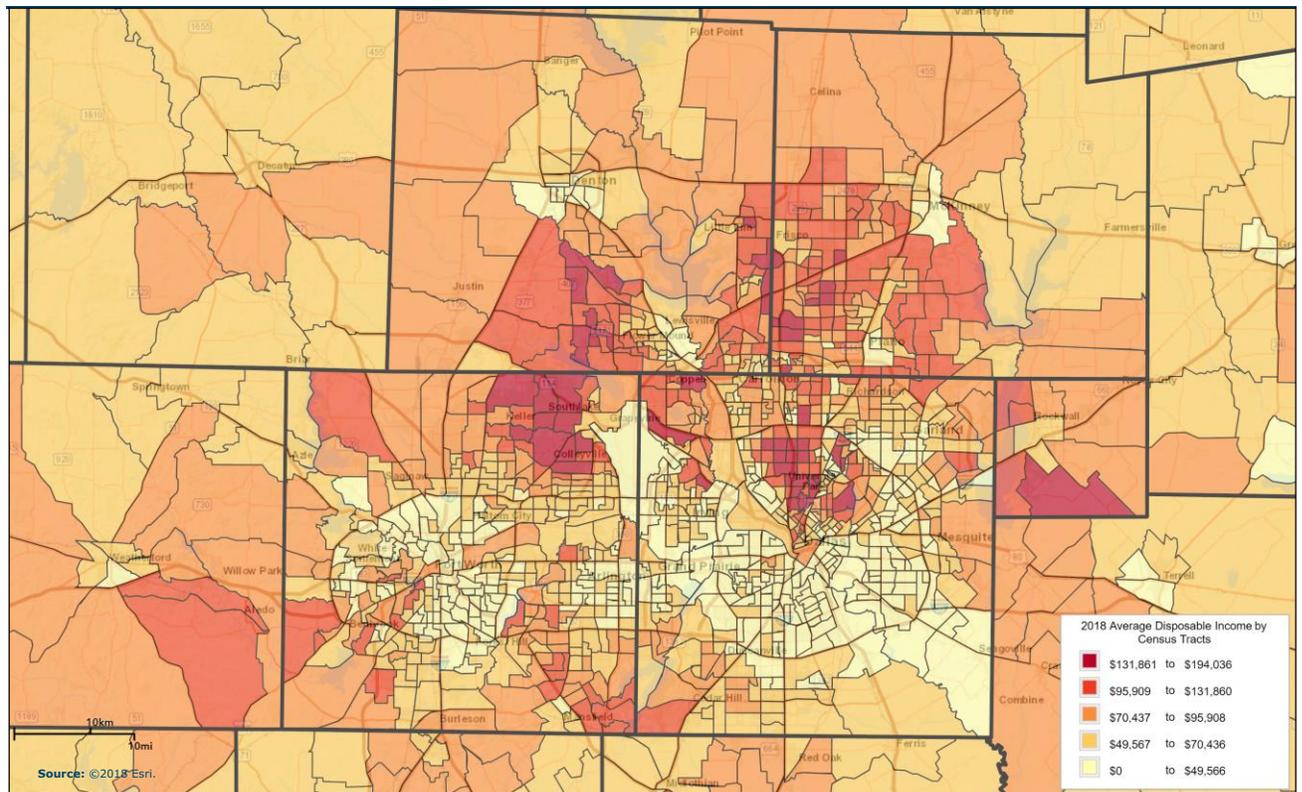
Analytical Approaches Used

Esri's Business Analyst Web was used to find the neighborhoods where XYZ's target customers reside. Tapestry Segmentation was used. Tapestry Segmentation is a form of geodemographic segmentation which classifies and characterizes neighborhoods based on demographics, socio economic and lifestyle characteristics. This defines the prevalence and preferences of specific target groups. Neighborhoods with above average disposable incomes were where target customers reside. A map was made using average disposable income at first the zip code level of Denton, Dallas, Tarrant, and Collin counties and then at the census tract level to better visualize the neighborhoods where these people live. The census tracts with the highest average disposable income were then recognized and market profiles were created which gave insight into education level, age, sex, lifestyle choices, and spending habits. Looking at these from the zip code level

helped give insight to find ideal location areas for the distribution centers to be placed. Using the Costar database fifteen properties were selected from these zip codes or from the immediate surrounding area. The property addresses were entered in an excel spreadsheet. Maptitude was used to create a map of the Dallas-Fort Worth Metropolitan area. The distribution file was then added to the map. The facility location analysis tool was used to find five distribution centers out of the fifteen potential centers. The route time was the fastest skipping routes longer than thirty minutes. Best overall service was the new facility setting. Next the addresses of these five facilities were entered in a new spreadsheet and imported into Esri's Business Analyst Web. Under the Define Areas for Reports Tab Find Location was used. Each distribution center's address was entered in to create three drive time rings with intervals of ten minutes, twenty minutes, and thirty minutes. This created thirty-minute drive time rings for each location. The locations with their drive time rings were then overlaid on a map showing the average disposable income at the census tract level for the Dallas-Fort Worth Metropolitan area. These included Collin, Dallas, Denton, and Tarrant Counties.

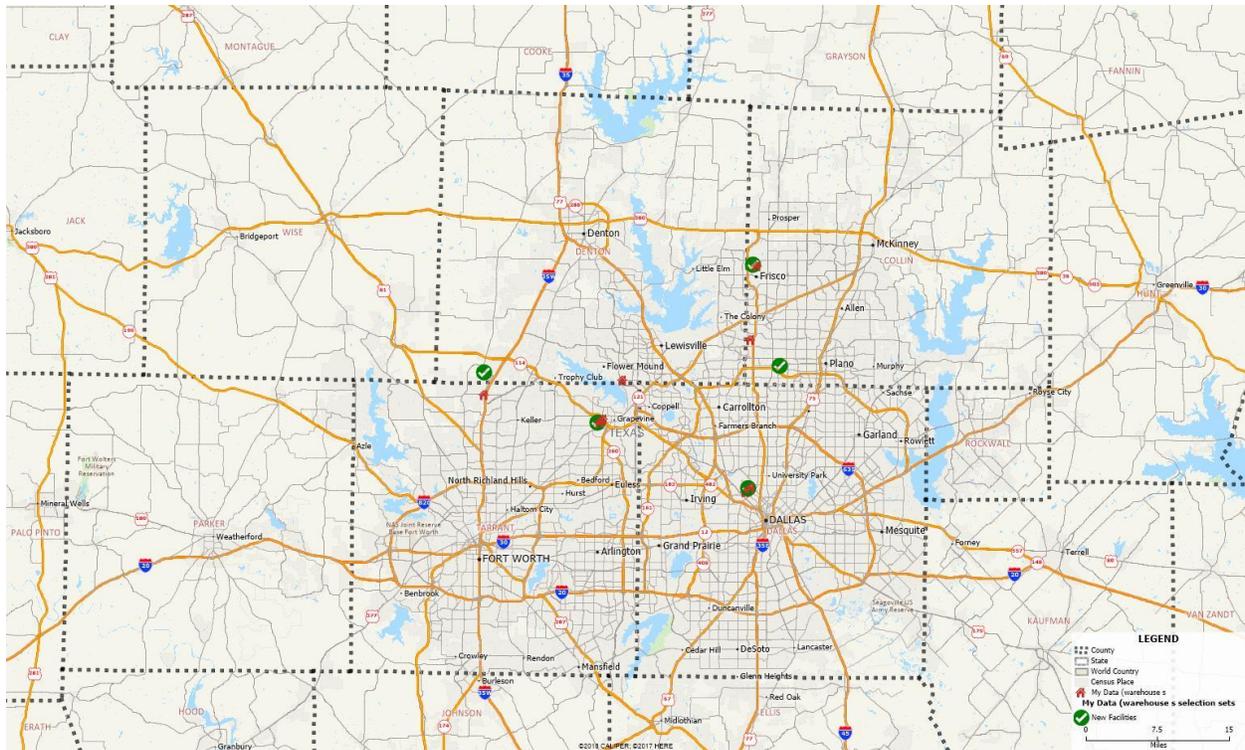
Results Obtained

The resulting map shows the census tracts or neighborhoods with the highest average disposable income.

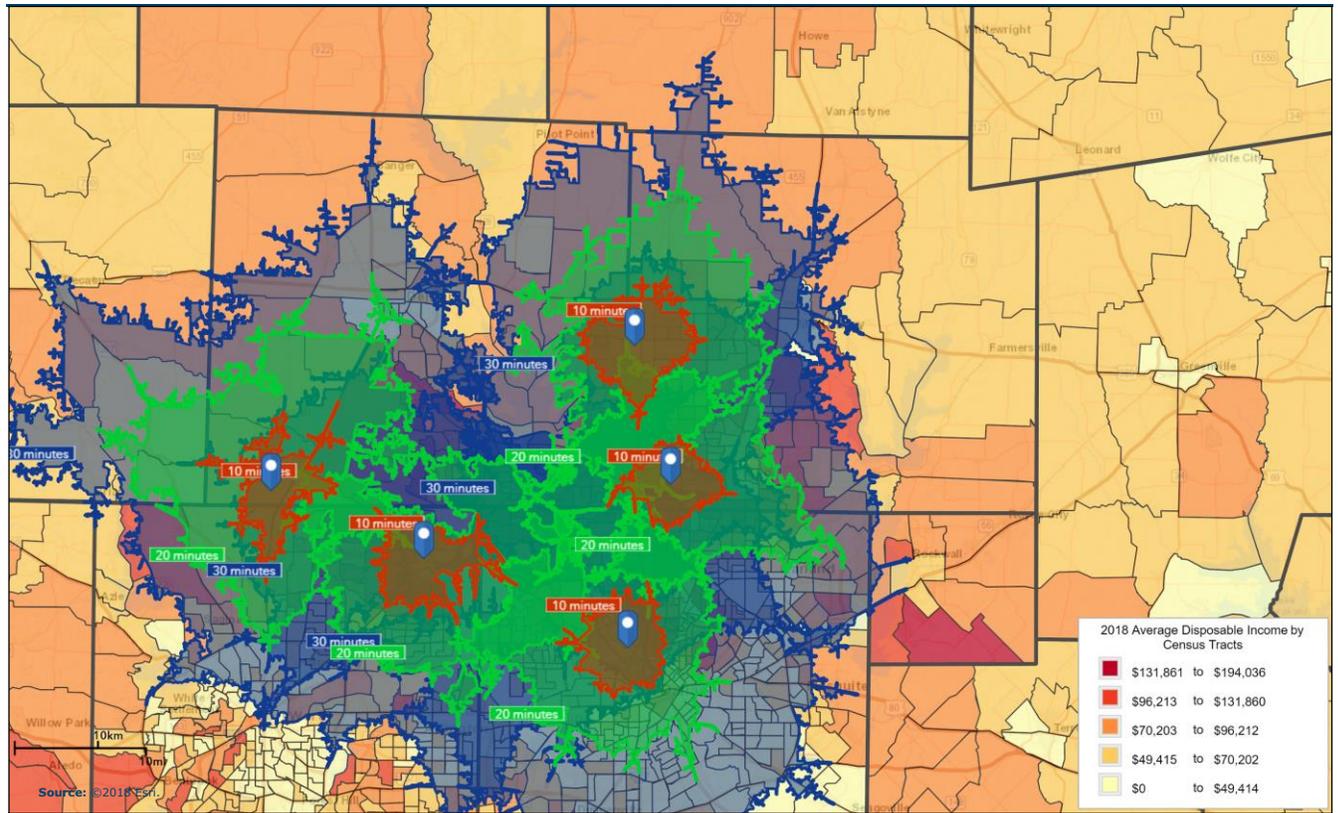


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The zip codes with the highest average disposable incomes were 75022 (Flower Mound), 76092 (Southlake), 76034 (Colleyville), 75225 (University Park), 75093 (Plano), and 75034 (Frisco). These were used to find fifteen potential properties in these zip codes or the immediate surrounding zip codes. The facility location analysis tool calculated that the properties at 100 S Nolen Dr, Grapevine TX, 75051, which is 113,610 square feet, 800 Fulgham Rd, Plano TX, 75093, which is 90,600 square feet, 10825 John W Elliot Dr, Frisco TX, 75033, which is 73,600 square feet, 2112 Eagle Pky, Fort Worth TX, 76177, which is 407,800 square feet, and 6519 Cedar Springs Rd, Dallas TX, 75235, which is 61,380 square feet. The resulting map shows these five locations after the analysis.



These five locations were then entered into Esri’s Business Analyst Web with thirty-minute drive time rings created for each location. This was overlaid onto a map of average disposable income at the census tracts level. This is the resulting map that shows how these locations service the Dallas-Fort Worth Metropolitan Area and the XYZ’s target customers.



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Applications

These five locations provide excellent coverage to the majority of the Dallas-Fort Worth Metropolitan area. However, it does not meet the thirty-minute window in the area south of downtown Fort Worth. One possible solution can be in the future to add another distribution center in the Burleson area or in between downtown Fort Worth and Burleson. Another potential option could be to find a facility located further south along interstate 35 W. The chosen distribution center on Eagle Parkway in Fort Worth is also well above the minimum size. XYZ could potentially lease out part of the facility to gain profit and reinvest those profits in new

capital. These analytical approaches and tools can be extremely helpful if and or when XYZ wants to expand. The tapestry segmentation allows them to pinpoint where their target customers are located and even provides additional maps of where similar groups are located in the country. Marketing and advertising is no longer universal. It is specific and directed towards target groups of people with certain lifestyle choices. This type of analysis can be useful if XYZ were to ever try and enter different additional business markets.