SUR6943 Geographic Information Systems GRADUATE PROJECT BY: NICHOLAS A. GROKHOWSKY

OBJECTIVE:

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Objective 1: Geocode and map client data for target product



Objective 2: Visualize the average annual income per unit per zip code and/or per county 03

Objective 3: Identify target location to market product based on maximum income produced

DATA

Historical client data for product to be marketed

State boundary data

County boundary data

Zip code boundary data

CLIENT DATA

- Identify agency's target product to market
 - Malpractice insurance carrier 'B' dataset
 Street Address, City, State, and Zip code
 Income generated per client
 - Home insurance carrier 'A' dataset
 - Street Address, City, State, and Zip code
 - Income generated per client
 - Replacement value per dwelling

BOUNDARY DATA

State boundary data from US Census Bureau

https://www.census.gov/geo/maps-data/data/cbf/cbf_state.html

County boundary data from US Census Bureau

- https://www.census.gov/geo/maps-data/data/cbf/cbf_counties.html
- Zip code boundary data from US Census Bureau
 - https://www.census.gov/geo/maps-data/data/cbf/cbf_zcta.html

CRITERIA

Data	Start with state boundaries, county boundaries, zip code boundaries, and client datasets					
Address Locator	Create an address locator based on five digit zip codes					
Geocode	Geocode client data to the zip code address locator					
Join	Join geocoded client data to zip code polygons and county polygons based on average client data per polygon					
Symbology	Change symbology for each new joined data set to show lowest average income to highest average income per county and zip code					

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DATA – MALPRACTICE CLIENTS

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GEOCODING CLIENT DATA

- Create address locator based on zip codes
- Geocode malpractice clients to new address locator
- Correct unmatched points

JOINING GEOCODED POINTS TO STATE POLYGONS



were set to two decimal places, and all polygons with average income equal to zero and count less than five were excluded.



FINAL MALPRACTICE MAP

• After identifying that Washington state is the most profitable state for malpractice insurance I analyzed the counties within the state

• After clipping the data at Washington state, one county was identified as the most profitable county in the state, and therefore the most profitable county in the country for this product

• The conclusion of this information is that Whatcom county should be the focus of the next marketing campaign for this malpractice insurance product

CRITERIA

Start with state boundaries, county boundaries, zip code boundaries, and client datasets

Create an address locator based on five digit zip codes

Geocode client data to the zip code address locator

Join geocoded client data to zip code polygons and county polygons based on average client data per polygon

Project joined dataset for grouping of attributes

Change symbology for each new joined data set to show lowest average income to highest average income per county and zip code

Group attributes to be studied

Buffer location of agency

Intersect buffer by group

Identity of zip codes within buffer



DATA – HOME INSURANCE CLIENTS

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GEOCODING CLIENT DATA

- Geocode home insurance clients to new address locator
- Correct unmatched points

JOINING GEOCODED POINTS TO ZIP CODE POLYGONS



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PROJECT DATA FOR GROUPING ANALYSIS

Project data in ArcCatalog ->ArcToolbox in order to group attributes accurately



CHANGE SYMBOLOGY

The label values were set to two decimal places, and all polygons with average income equal to zero were excluded

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GROUPING ANALYSIS

Average dwelling and average income are grouped



GROUPING ANALYSIS

Average dwelling and average income are grouped

GROUP-WISE SUMMARY



The group-wise summary was created in order to identify the groups on the map

FINAL HOME INSURANCE MAPS

After grouping the average income and average dwelling value per zip code the color and labels were changed for each group

We see our target dwelling values within the most profitable zip codes in group 2 – highlighted in red

To further this analysis one additional map will be created that identifies the red colored zip codes (group 2) within a fifteen mile buffer around the office's zip code



CREATE BUFFER INTERSECT

IDENTITY







FINAL HOME INSURANCE MAPS

- After creating a fifteen mile buffer from the zip code the agency is located in (33487), intersecting the buffer with the high income group, and then creating an identity between the intersect and zip codes we now have seven targeted high income zip codes
- The conclusion of this study is that homes with replacement values of \$288,000 in these seven zip codes are the most profitable zip codes to market for this home insurance carrier's product

HIGH INCOME ZIP CODES WITHIN FIFTEEN MILES OF 33487

