

Investment property in Minneapolis Neighborhood

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Introduction

DESCRIPTION & DISCUSSION OF THE BACKGROUND

Minneapolis is a city located in Hennepin County, Minnesota along the bank of the Mississippi River. It is the largest city in Minnesota with a 2020 population of 437,069, and the 45th largest city in the U.S. Also, it is the 16th largest metropolitan area in the U.S. Minneapolis is currently growing at a rate of 1.35% annually. Spanning over 58 square miles, Minneapolis has a population density of 8,094 per square mile. The 2020 census information shows that the Twin Cities area has gained another 60,000 people since 2010 where Minneapolis is leading the growth.

Minneapolis is surrounded by lakes, creeks and waterfalls, which of many connected by parkways in the chain of lakes and the grand rounds national scenic byway. Due to its ease access, the city is ranked as having the best park system in U.S., also, known to be the best bike-friendly city in the U.S. The city hosts various arts scene, performing arts venues and sports events via three stadiums. The variety of options for cuisine, fine dining and local foods are available. Minneapolis is the major financial center. It is the 3rd largest economic center in Midwest. The twin city metropolitan area has the 5th highest concentration of major corporate headquarters in the country which makes the 15th richest city in the U.S. (See Wikipedia: <https://en.wikipedia.org/wiki/Minneapolis>)

The fact that the Minneapolis is a home of big cooperation presents various employment opportunities in the city. Besides, its rich environment makes a desirable place to work and live. Consequently, the Minneapolis housing market is very competitive which attracts many investors to own investment property, such as a rental unit. The problem is that Minneapolis has 87 neighborhoods and is known to be the 3rd most expensive city in North America. From the investors point of view, it is desired to own a rental property with the following characteristics: Firstly, the location of the property is in a safe neighborhood where a reasonable commute to the center of the city is expected. Next, the property is priced reasonably. Lastly, it would be a plus if a neighborhood is comprised of assorted venues to accommodate various lifestyle. Many websites offer different aspects about Minneapolis neighborhoods, but it takes a long time for investors to review, analyze and summarize them. Therefore, this research is an attempt to solve a problem for investors to identify the best Minneapolis neighborhood to own a rental property. The Foursquare location data is utilized to

examine the proximity to the center of the city and the venues of each neighborhood in Minneapolis in conjunction with crime data and home price data obtained from Open Minneapolis and Zillow, respectively.

Data

Four different data sources are used in this study.

1. The data containing name and geographical coordinates of Minneapolis neighborhoods is retrieved from Open Minneapolis site:
https://opendata.arcgis.com/datasets/055ca54e5fcc47329f081c9ef51d038e_0.geojson
2. The crime data per Minneapolis neighborhood in 2018 is retrieved from Open Minneapolis site:
<http://opendata.minneapolismn.gov/datasets/police-incidents-2018-pims/data>
3. The median home price in Minneapolis data in 2020 is obtained from Zillow site:
<https://www.zillow.com/minneapolis-mn/home-values/>
4. Foursquare location data of Minneapolis is retrieved from the site:
<https://foursquare.com/developers/apps>

The official name and geographical location of neighborhoods are obtained via Open Minneapolis site. The official names of 87 Minneapolis neighborhoods in this file are used to combine the data.

In order to measure the safety of neighborhoods, the crime data is retrieved from Open Minneapolis site. The year 2018 version is the most current data. The crime data is cleaned to include only the necessary information, i.e., description of the offense, longitude, latitude, and the name of the neighborhoods. During the data inspection, it is found that one neighborhood name in crime data still contains its formal name, Carag, so it is updated. 11,604 reported incidents across 33 different crime types are observed across Minneapolis neighborhoods in 2018. It is found that three cases have a missing neighborhood name. Since a missing neighborhood name cannot be identified, these three cases are dropped from further analysis. Therefore, 11,601 incidents across 33 different crime types are included in the study.

The median home price data in 2020 is retrieved from Zillow site to understand the housing market across Minneapolis neighborhoods. The home price of all types is used in this study. In Zillow data, some mismatches of neighborhood names are noticed. Most of them are due to typo. The data is cleaned to match the official Minneapolis neighborhood names. It is noted that three industrial areas in the city, i.e., Mid-City Industrial, Camden Industrial and Humboldt Industrial Area, do not have any home price information which is expected. For home price analysis, these three areas are excluded.

The cleaned data includes 11,601 total number of incidents dealing with 33 different crime types across 87 Minneapolis neighborhoods and the home prices across 84 Minneapolis neighborhoods. Next, the cleaned data is combined with Foursquare location data to find the

available venues across 87 Minneapolis neighborhoods. It is found that there are 258 different venue categories, which implies that the city offers diverse venues. Many venues are shown less than ten times across neighborhoods. Since the data seems to be too sparse and some of the similar venues are presented with various names, i.e., Café and Coffee Shop, it is decided to combine features that are similar and to choose based on the frequency of the popular venues. Subsequently, 29 features are selected. Among them, 11 features are chosen from Foursquare location data as is. They are bookstore, brewery, cosmetics, food truck, salon, spa, video store, hotel, home store, home price and number of crimes. 18 features are combined based on the similarity of the venues. The features with combined venues are listed in Table 1 with the inclusion criteria.

Table 1. Features with combined venues

Features	Features with combined venues: Inclusion criteria
art	Art Gallery, Art Museum
bakery	Bakery, Bagel, Donut, Pastry shops
deli	Deli, Sandwich place
shopping	Clothing, Boutique, Shopping Mall, Dept Store, Discount Store, Toy Store, Optical Store, Shoe Store
coffee	Coffee, Café, Tea, Juice
fastfood	Fast Food Restaurant, Fried Chicken Joint
grocery	Grocery Store, Health Food, Supermarket, Gourmet, Convenience Store, Farmers Market
gym	Gym, Fitness Center, Sports Club, Dance, Pilates and Yoga Studios
icecream	Ice Cream, Dessert shop, Frozen Yogurt shop
music	Concert Hall, Opera House, Rock Club, Music Venue
park	Park, Garden, Outdoors & Recreation, Sculpture Garden, Trail, Playground, Lake, Scenic Lookout, Historic Site
transit	Bus, Rail, Train
theater	Performing Arts Venue, Theater, Comedy Club
restaurant	All types of Restaurants
arena	Baseball, Football, Soccer Fields, Stadiums, Hokey Arena
bar	All types of Bars
alcohol	Beer, Wine, Liquor store
pet	Pet Store, Dog Run

The final data contains 29 features across 87 Minneapolis neighborhoods.