

# The Effects of Housing Volume Increase in Orange County

## Summary of Findings



UCF Data Analytics – March 9, 20019

**Team Members:** Elizabeth Jaye, Dinielle Nelson, Dolly Vickers, Robert Perron, Cindy Gorbas

### **Resources:**

*Multiple Listing Service (MLS) .csv*

*The US census: American Community Survey API*

*Housing Survey .csv*

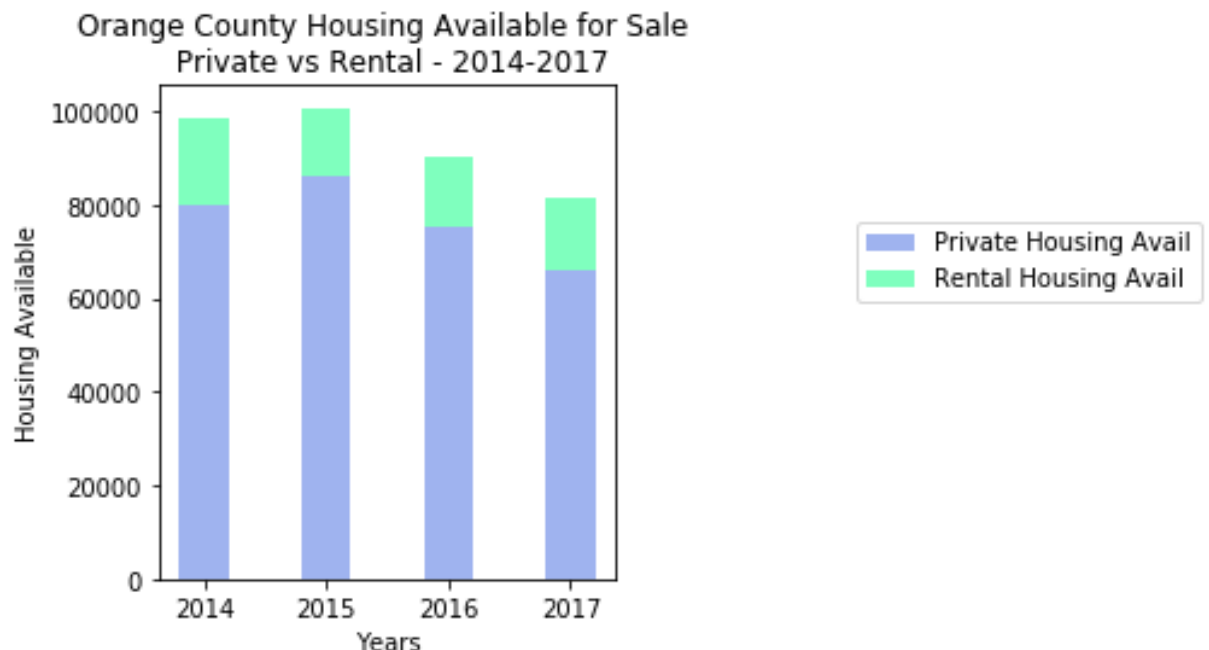
## Core Message & Hypothesis

As a group we are interested in the impact and effects the increase of housing volume has had in Orange County. Our hypothesis is that if housing volume increases then home ownership becomes a less attainable goal? The importance of our findings is easy to relate to and of vital importance to all of us as we fall under the home ownership or rental categories. The trends seen over the years of 2014 and 2017 will yield interesting and reliable information that can help us make better and more informed decisions in the future.

### Question 1: Availability

As the overall volume of housing increases overtime, there are fewer homes available for purchase. We expect the proportion of available rental homes will go up in comparison to the number of homes available for purchase. We expect that the large volume of housing is going to rental homes. Our research question then is how has the proportion of available homes to rental homes changed over the last five years?

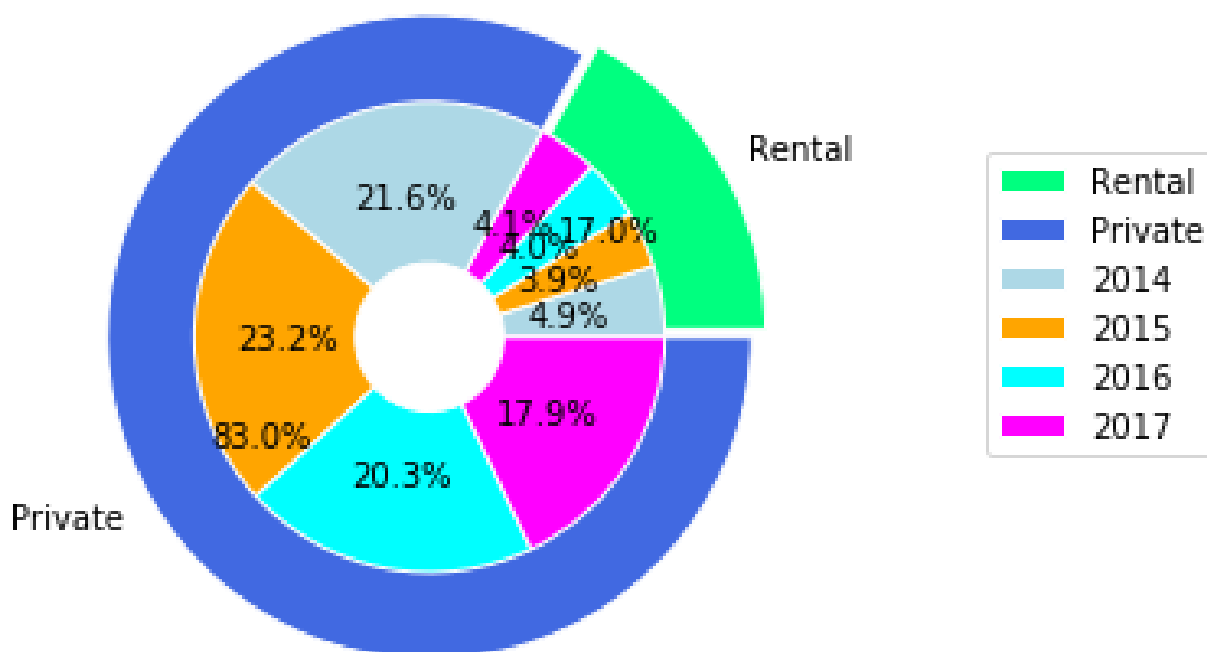
### **Plot:**



### Findings:

Over the years of 2014-2017 the number of private homes available increased by approximately 10% between 2014 and 2015 and then decreased about 10% each year between the years of 2015 and 2017 while the number of rental properties were at a volume of about 200,000 in Orange County in 2014 and then decreasing to about 100,000 each year after until 2017.

### Orange County Housing Available for sale - Private vs Rental



Property Type	2014		2015		2016		2017
Private	21.6	↗	23.2	↘	20.3	↘	17.9
Rental	4.9	↘	3.9	↗	4.0	↗	4.1

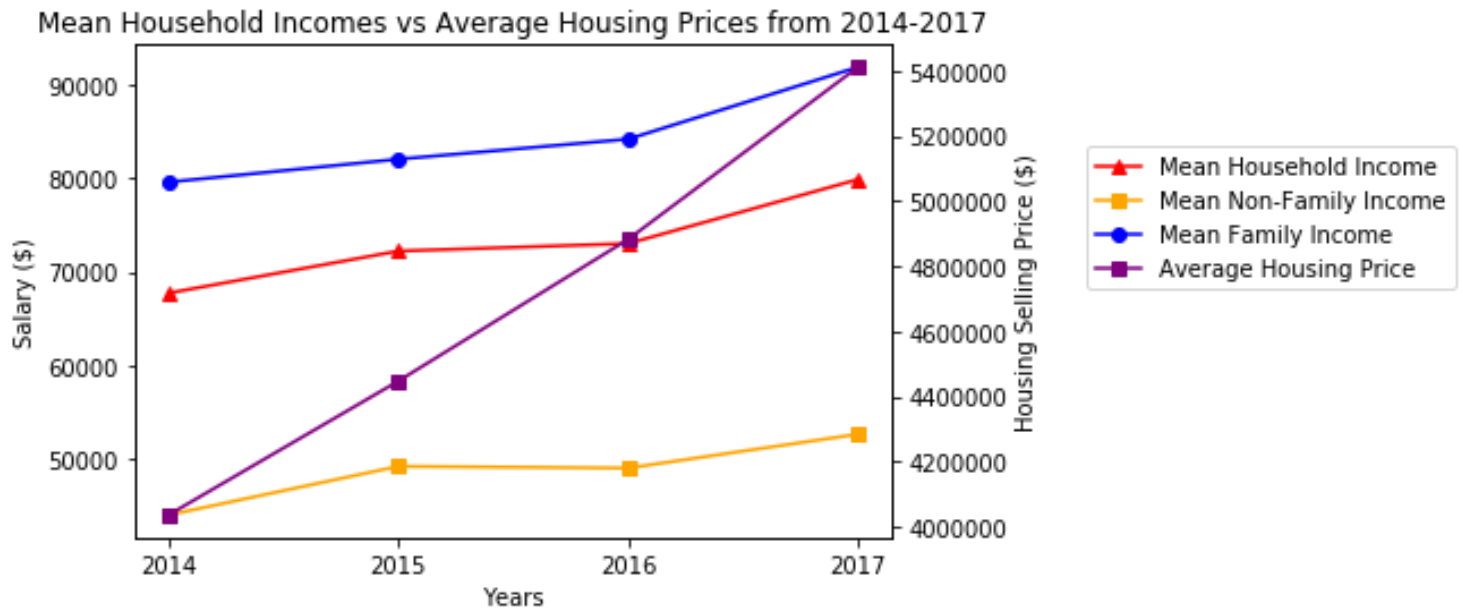
### Findings:

As private home properties increase, rental property type availability decreases. As private home property type decreases, rental property type availability increases.

## Question 2: Affordability

As the volume of housing increases, affordability decreases. We expect that the proportion of average household income to average housing cost will grow over time. Our research question then is how has the proportion of average household income to average housing cost changed over time?

### Plot:



### Findings:

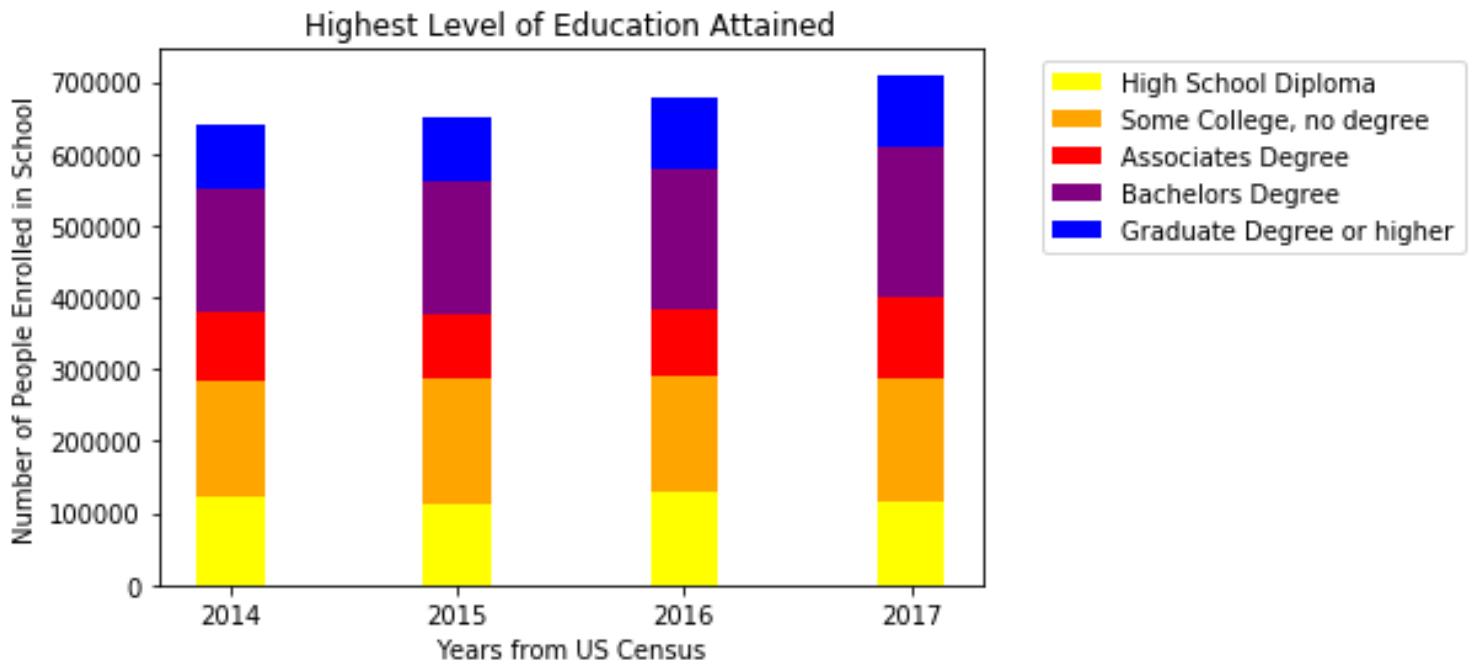
Between 2014 and 2017 the average household income (red line) has increased less than \$10,000 while the average housing prices have increased about \$40,000 in only three years. In 2014 the average housing price (Residential and rental property for sale price – purple line) was approximately \$400,000 with a steady increase in the three years to an outstanding average cost of \$540,000. That is a 135% increase, while average household/non-family/family income only increased a total average of \$10,000 for ALL three years combined!

### Question 3: Demographics

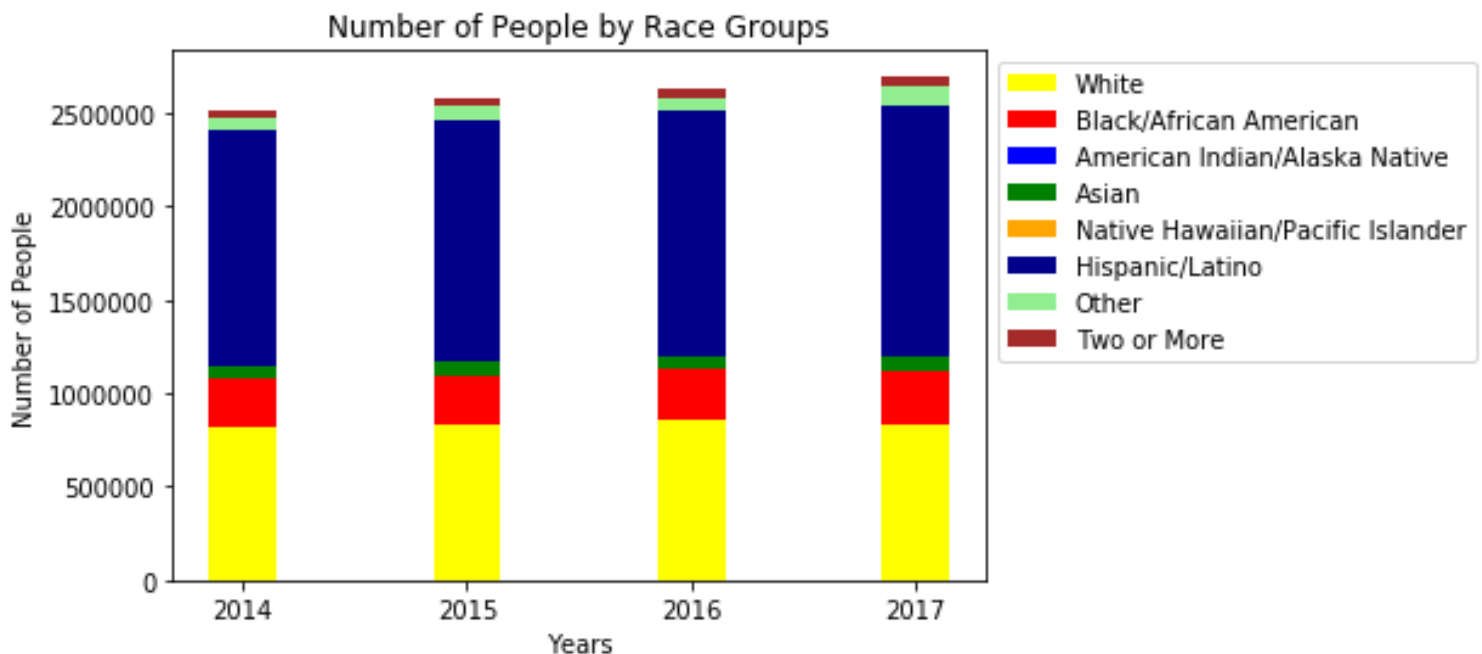
As the volume of housing increases, we expect the population to grow and demographics to skew over time. We expect to find a population that implies gentrification: has more education and a change in race/ethnicity and age. Depending on the changes, this could imply new industry, a migration pattern or many other phenomena. While this would not be definitive, it would start us on new paths to make further queries. Our research question then is how the demographics of the local population in this region of Orange County, Florida changed over the last five years and if any of these changes have a noticeable impact on housing availability and costs?

#### Demographics Plots:

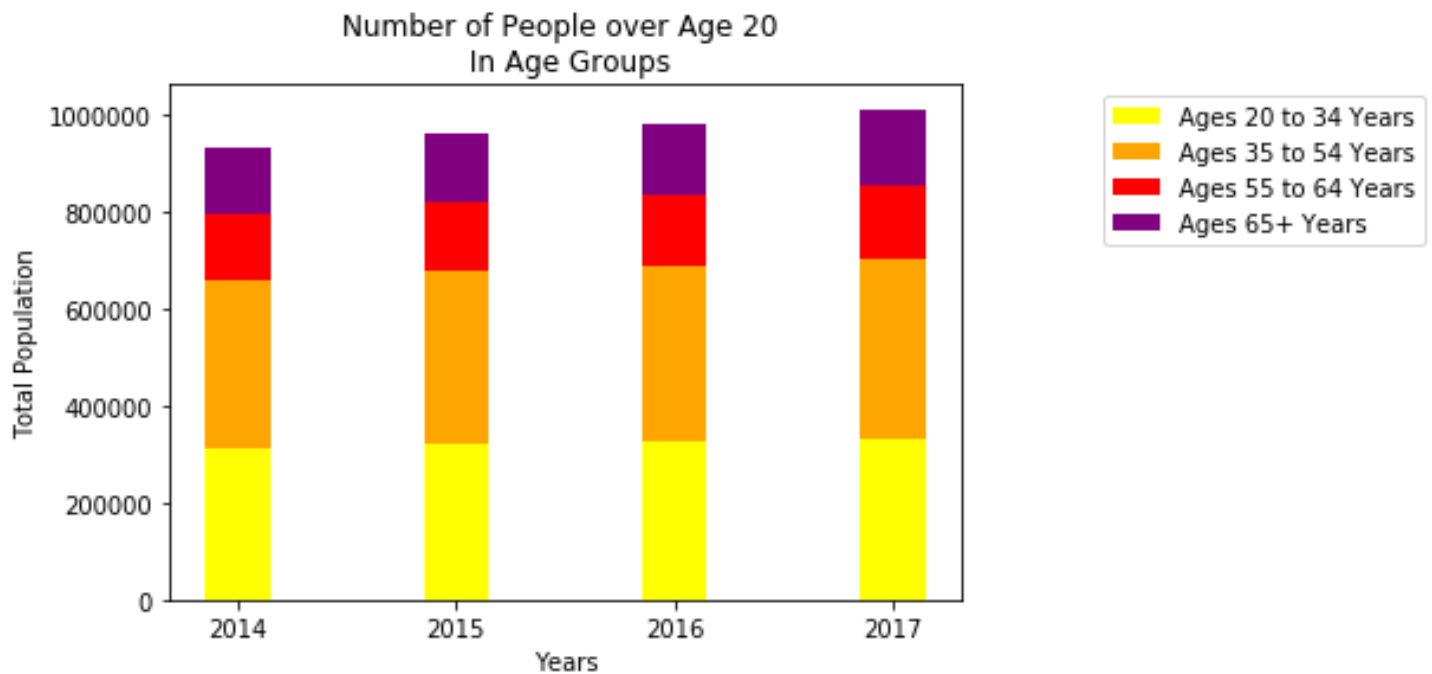
##### A. Education



##### B. Race



### C. Age



#### Findings:

- A. According to data found in the US Census between the years of 2014-2017, the greatest visible and numerical change in Orange County was an increase in the number of people enrolled in a bachelor's degree program between 2014 and 2015, with a slight decrease in the next two years.
- B. The number of **Hispanic/Latino** was the most notable change as it was the greatest race group increase in Orange County over those years observed with all other race groups staying relatively unchanged in numbers.
- C. The number of people in Orange County between 2014 and 2017 saw a small increase in all age groups between 2014 and 2015 with no noticeable changes in the next two years. Those between the ages of 55 to 64 saw a small decline between 2015 and 2017.

## Implication of Findings:

The data supports our original hypothesis and provides answers to our proposed questions. In Orange County we can say that, over the years of 2014 through 2017, as housing volume increases then home ownership becomes a less attainable goal. What does this really mean to us? Given the small increase in average income, home ownership affordability decreases and the probability of renting increases. We can use the data from the US Census to make projections based on past trends for business, marketing and community needs focused on Hispanics/Latinos as the growing race group in Orange County, home ownership for ages 35 to 54 and those enrolled in bachelor's degree programs. This brings us to questions for the future...

## Some, not all, Questions for the Future:

- What changes can be made on a county level to decrease the gap between availability and affordability?
- How can we use the Census and Multiple Listing Service data to meet the needs of growing race groups in Orange County?
- How can we increase home ownership across all post high school education levels and those over the age of 55?
- What types of structures and infra-structures need immediate change and/or rehabilitation/renovations to address the increase in housing volume and the challenges that creates in Orange County?
- As average household salaries remain significantly the same (very little increase), what implications does this mean? Will an average household include grandparents and adults who have returned from college?
- As housing volume increases, are there more schools/hospitals/roadways/etc. to support this growing volume?
- Given the lack of affordability for private residences, how to we protect renters from growing rental prices?

## Some, not all, Factors/Limitations to Consider:

- US Census data only available until 2017
- Florida Multiple Listing Service data only includes “represented” sellers and buyers. Sold by owner properties, rentals through Craigslist, etc. not reflected in the data.
- Compiling, pulling, merging and writing the codes to represent the data was a nightmare for “beginners” (a.k.a. us) and, therefore, not error proof.
- GitHub was a huge “CHALLENGE”...
- Assignment of roles and differing levels of data manipulation understanding/confidence
- Every study needs more time...