College Towns

Are they all the same?

Background

- Small college towns are communities that are largely defined by the single largest industry in the town, namely higher education. They are the subject of intense interest for both parents and young adults for a relatively short period of time during the search for a college and the subsequent (hopefully four) years spent at that college.

- So are all small college towns pretty much the same? Does geographical location largely determine climate? Are there distinctive characteristics we can identify based on the walking distance businesses?
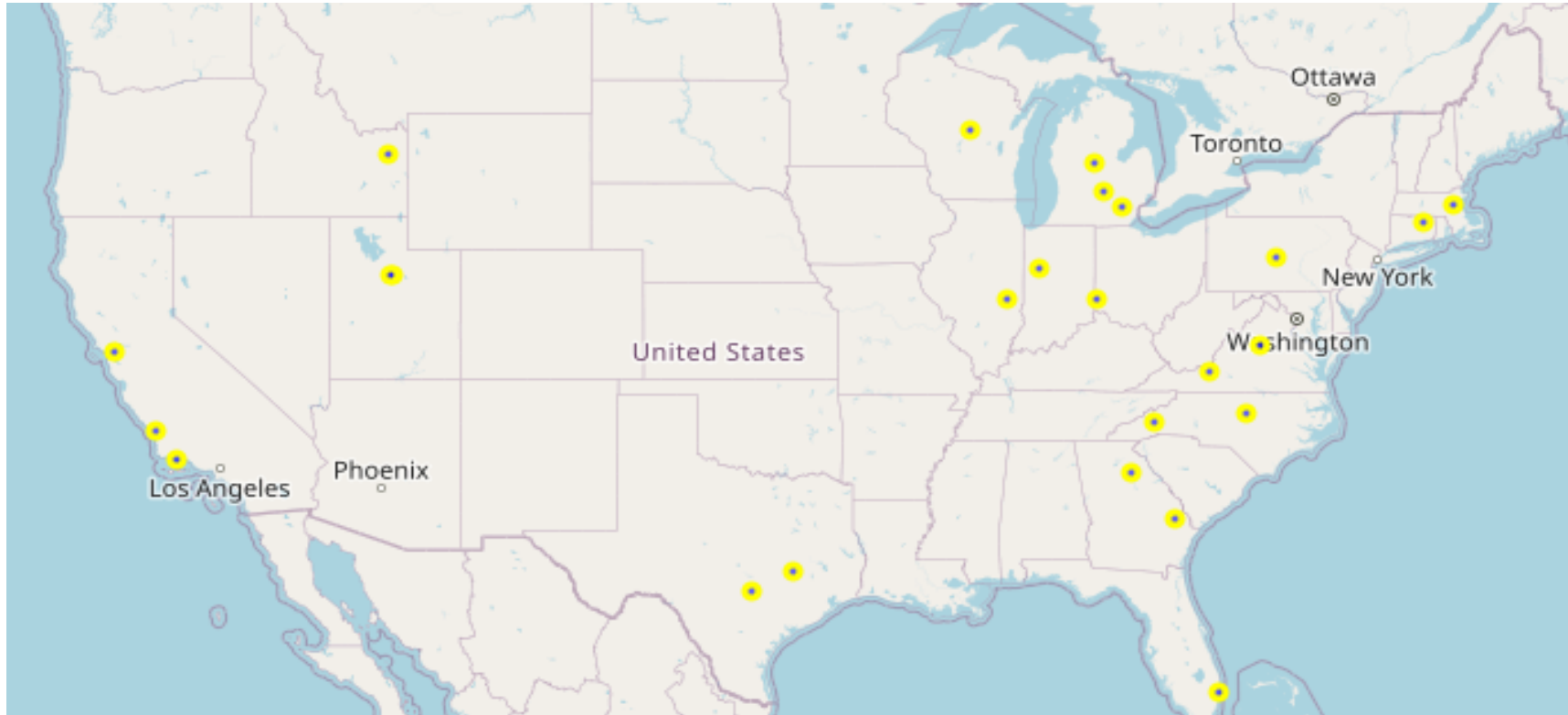
Analytical Approach

- To answer these questions a sample of 25 small college towns were selected for analysis.

- Basic data including student population, temperatures, rain and snowfall, sunny days and elevation were gathered from web sources.

- Venue data within one mile of the campus was collected using the Foursquare developer API. The list of venues and a Foursquare categorization was recorded.

- An exploratory data analysis was performed to understand the climate and walking distance businesses students experience.

WalletHub.com Top 25 Small College Towns

Town	College Name
Ann Arbor, MI	University of Michigan
Provo, UT	Brigham Young University (UT)
Rexburg, ID	Brigham Young University (ID)
Charleston, IL	Eastern Illinois University
Stevens Point, WI	University of Wisconsin
West Lafayette, IN	Purdue University
Charlottesville, VA	University of Virginia
Orem, UT	Utah Valley University
Cambridge, MA	MIT
Santa Barbara, CA	UC Santa Barbara
San Marcos, TX	Texas State University
Asheville, NC	University of NC Asheville
San Luis Obispo, CA	Californa Polytechnic State University
College Station, TX	Texas A&M
Berkeley, CA	UC Berkley
Chapel Hill, NC	University of NC Chapel Hill
Oxford, OH	Miami University College of Arts and Science
Boca Raton, FL	Florida Atlantic University
Athens, GA	University of Georgia
State College, PA	Pennsylvania State University
Blacksburg, VA	Virginia Tech
Mount Pleasant, MI	Central Michigan University
Storrs, CT	University of Connecticut
Statesboro, GA	Georgia Southern University
East Lansing, MI	Michigan State University

Geography

- The locations of the selected towns span the US.

Clustering based on basic data

- The basic data elements were used as input to hierarchical clustering. This analysis was iterative in nature and the final set of inputs to the hierarchical clustering algorithm were

- Total student population

- Average precipitation

- Number of sunny days

- Average January (winter) temperature

Geography = Climate

Town	College Name	Hierarchy Cluster
Ann Arbor, MI	University of Michigan	Medium size, cloudy, cold and wet
Provo, UT	Brigham Young University (UT)	Medium size, sunny, cold and dry
Rexburg, ID	Brigham Young University (ID)	Medium size, sunny, cold and dry
Charleston, IL	Eastern Illinois University	Medium size, sunny, cold and wet
Stevens Point, WI	University of Wisconsin	Medium size, cloudy, cold and wet
West Lafayette, IN	Purdue University	Medium size, cloudy, cold and wet
Charlottesville, VA	University of Virginia	Medium size, sunny, cold and wet
Orem, UT	Utah Valley University	Medium size, sunny, cold and dry
Cambridge, MA	MIT	Medium size, cloudy, cold and wet
Santa Barbara, CA	UC Santa Barbara	Medium size, super sunny, temperate and dry
San Marcos, TX	Texas State University	Large, sunny, temperate and wet
Asheville, NC	University of NC Asheville	Medium size, sunny, cold and wet
San Luis Obispo, CA	Californa Polytechnic State University	Medium size, super sunny, temperate and dry
College Station, TX	Texas A&M	Large, sunny, temperate and wet
Berkeley, CA	UC Berkley	Medium size, super sunny, temperate and dry
Chapel Hill, NC	University of NC Chapel Hill	Medium size, sunny, cold and wet
Oxford, OH	Miami University College of Arts and Science	Medium size, cloudy, cold and wet
Boca Raton, FL	Florida Atlantic University	Medium size, sunny, hot and wet
Athens, GA	University of Georgia	Medium size, sunny, cold and wet
State College, PA	Pennsylvania State University	Medium size, cloudy, cold and wet
Blacksburg, VA	Virginia Tech	Medium size, sunny, cold and wet
Mount Pleasant, MI	Central Michigan University	Medium size, cloudy, cold and wet
Storrs, CT	University of Connecticut	Medium size, cloudy, cold and wet
Statesboro, GA	Georgia Southern University	Medium size, sunny, cold and wet
East Lansing, MI	Michigan State University	Medium size, cloudy, cold and wet

Geography = Climate

- The clusters are strongly associated with California, Texas, Florida, the Northwest, Northeast and Southeast. So we have really just confirmed our intuition that geographic location strongly influences climate.
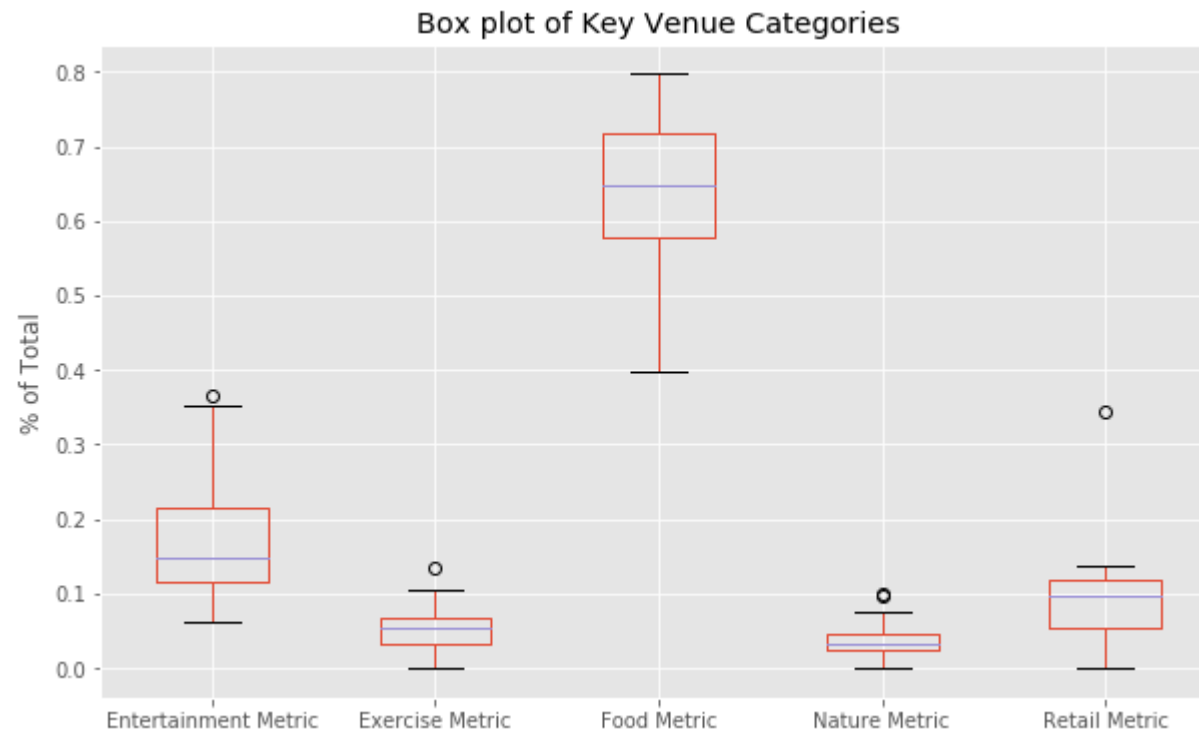
Foursquare Venues

- 271 Foursquare venue categories returned by API
- Categories were mapped manually to higher levels
- Some categories were excluded (e.g. Bank, ATM)
- Focus was on Food and Entertainment
- Category1 is first summarization
- Category2 is second summarization

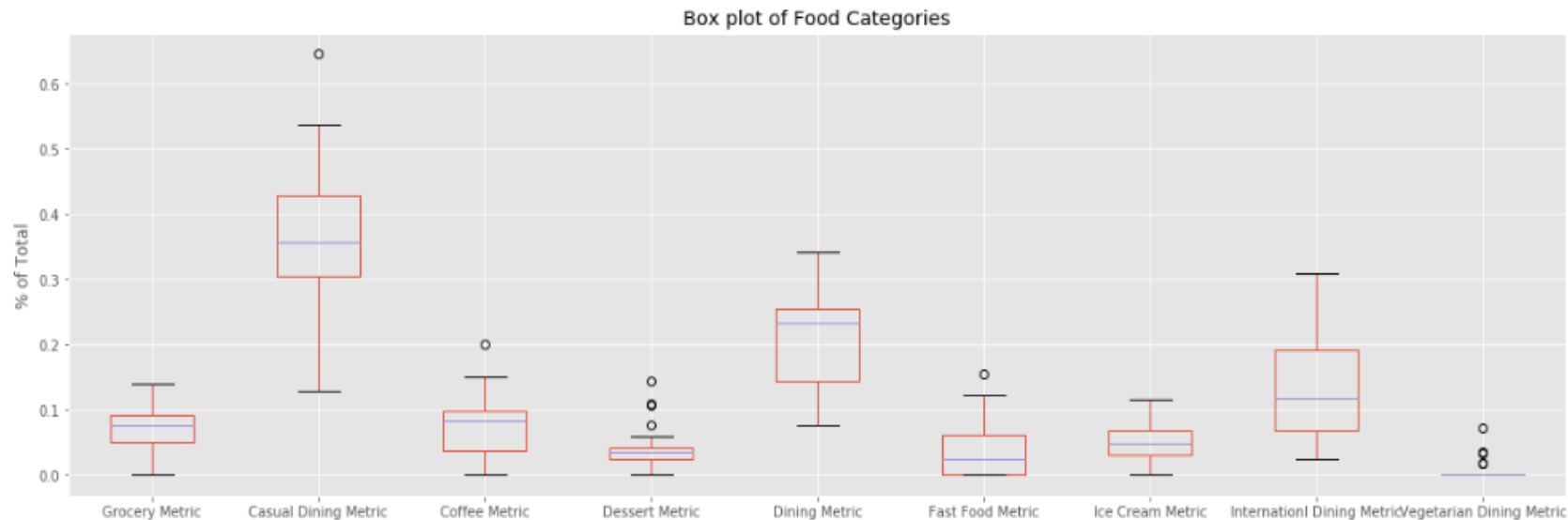| Category1	Category2
Arts Venue	Entertainment
Drinking Venue	Entertainment
Other Venue	Entertainment
Museum	Entertainment
Exclude	Exclude
Gym	Exercise
Pool	Exercise
Sporting-Leisure	Exercise
Yoga Studio	Exercise
Grocery	Food
Casual Dining	Food
Coffee	Food
Dessert	Food
Dining	Food
Fast Food	Food
Ice Cream	Food
International Dining	Food
Vegetarian Dining	Food
Nature	Nature
Retail	Retail

Food and Entertainment reign

- Counts of Category1 and Category2 for each college town were calculated
- The percentage of total for Category2 was calculated and was visualized.
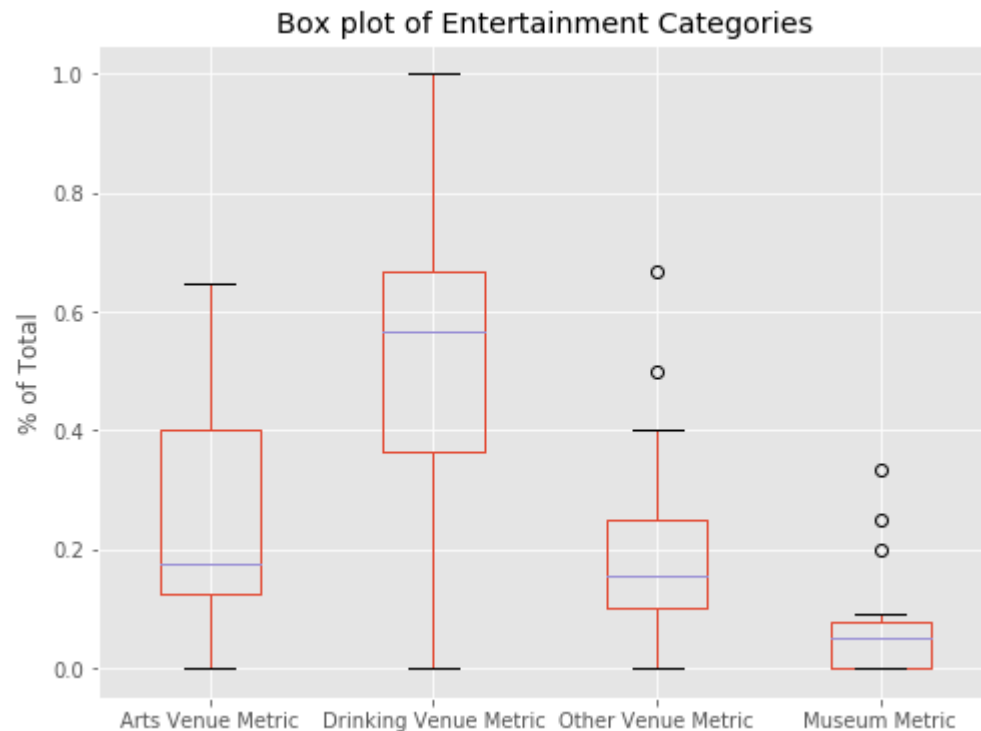

Box plot of Key Venue Categories

Food – Casual tops the list

- Casual dining is the most frequently occurring category. "Don't forget you are a poor college student" is a common parental mantra.

- Dining is second and then International Dining. Fast food is lower than expected.

Box plot of Food Categories

Entertainment – Let's drink and be merry?

- Drinking venues range from zero to 100 percent of entertainment total. What?
- Arts venues range from zero to 70 percent of entertainment total.

Box plot of Entertainment Categories

Conclusions

- College towns are quite different in terms of climate and the walking distance businesses that support them.

- While Food and Entertainment venues dominate in general, there are wide ranges in these categories between college towns.

- Climate alone does not seem to determine the type of businesses that exist close to college campus.

- Influences range from religion to the culture of the state/region.

- The analysis only scratched the surface of potential venue based analysis.