

# **Recommendations for Prospective Chapel Hill Business Owners**

DATA 150

This report was created by Shane Faberman and expands upon the presentation created by Shane Faberman, Summer Wu, Daniel Zhang, and John Liu.

## Executive Summary

As students attending the University of North Carolina at Chapel Hill, we interact with local businesses daily. This piqued our interest in looking in-depth at these businesses, specifically finding out which ones are more successful and why. Our dataset came from the Chapel Hill Open Data Portal<sup>1</sup>. It contained information about businesses located in Downtown Chapel Hill, such as category, district, location, and years in business. Since we couldn't find public profit data, we used longevity to measure business success.

Our analysis revealed that location and business category are significant determinants of longevity. Specifically, in the East district of Chapel Hill close to the University's campus, there was a much higher concentration of chain restaurants, retail stores, and bars, compared to the West district, which had more service and independent businesses. This can be explained by the population difference in the two districts, as older residents have different needs from college students.

Additionally, we found that restaurants and retail stores tend to have the shortest median longevity, reflecting the volatility of student-driven trends. In contrast, essential services like grocery stores and laundromats exhibit greater stability, indicating steady demand regardless of population flux.

We recommend that prospective business owners carefully determine their targeted customer base while choosing where to open their business in Chapel Hill. Prospective business owners targeting students should aim to open close to UNC-Chapel Hill's campus, while those targeting older residents should open closer to Carrboro.

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<sup>1</sup> **Town of Chapel Hill, North Carolina.** "Downtown Tenants." *Chapel Hill Open Data Portal*, ArcGIS Hub, [https://opendata-townofchapelhill.hub.arcgis.com/datasets/5d8ad624de0b415b9dd577984b072d22\\_0/explore](https://opendata-townofchapelhill.hub.arcgis.com/datasets/5d8ad624de0b415b9dd577984b072d22_0/explore). Accessed November 7, 2024.

## Introduction

Chapel Hill has experienced significant, consistent population growth in the last half-century, as shown in Figure 1 below.

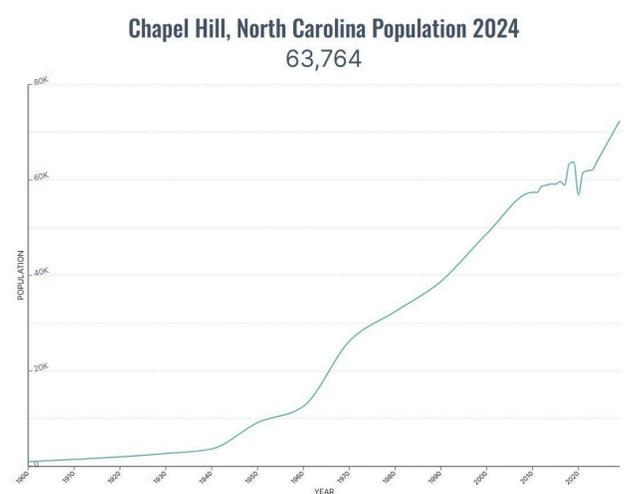
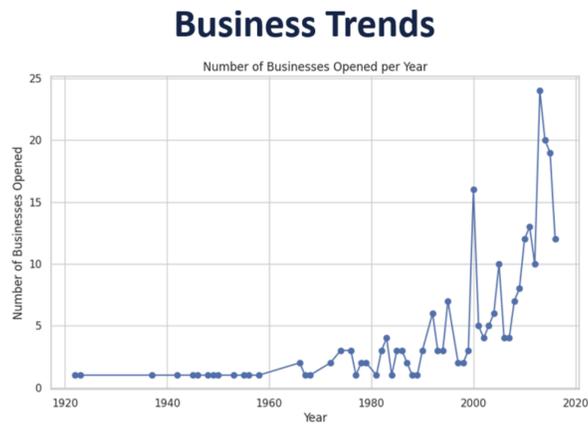


Figure 1<sup>2</sup>

To keep up with the increasing population, many new businesses have opened in Downtown Chapel Hill, and existing businesses have opened new locations. Restaurants such as Voodoo Wing Company and Próximo, retail stores like Dyehard Fan Supply and Shrunken Head, and other types of businesses, including Wentworth & Sloan and Beauty Art Supply, are just a few examples of the many companies new to Chapel Hill.

<sup>2</sup> “Chapel Hill, North Carolina Population 2024.” *Worldpopulationreview.com*, 2024, [worldpopulationreview.com/us-cities/north-carolina/chapel-hill](https://worldpopulationreview.com/us-cities/north-carolina/chapel-hill).



*Figure 2*

As shown in Figure 2, this trend of more businesses opening in Chapel Hill has held for the last two decades. In addition, as UNC-Chapel Hill grows, more students with different tastes from all over the world are living in Chapel Hill. Prospective business owners must realize these population trends when considering their entrepreneurial ideas.

## Methods

As discussed in the executive summary section, our public dataset from the Chapel Hill government contained information about businesses in Chapel Hill, such as location, longevity, category, etc. Since we couldn't find public profit data, we used longevity to measure business success. High longevity mirrors the ability to adapt to changing market conditions and consumer interests, reflecting a strong business. We used several tools to perform our data analysis and construct our visualizations:

- **R** (packages: tidyverse, ggmap, osmdata, sf)
- **Python** (packages: pandas, matplotlib, numpy)
- **Tableau**

We focused on business longevity, category, and business location to make our recommendations, as we wanted to make recommendations to a wide variety of prospective entrepreneurs with diverse, creative business ideas.

## Findings

We started by broadly looking at longevity by business category.

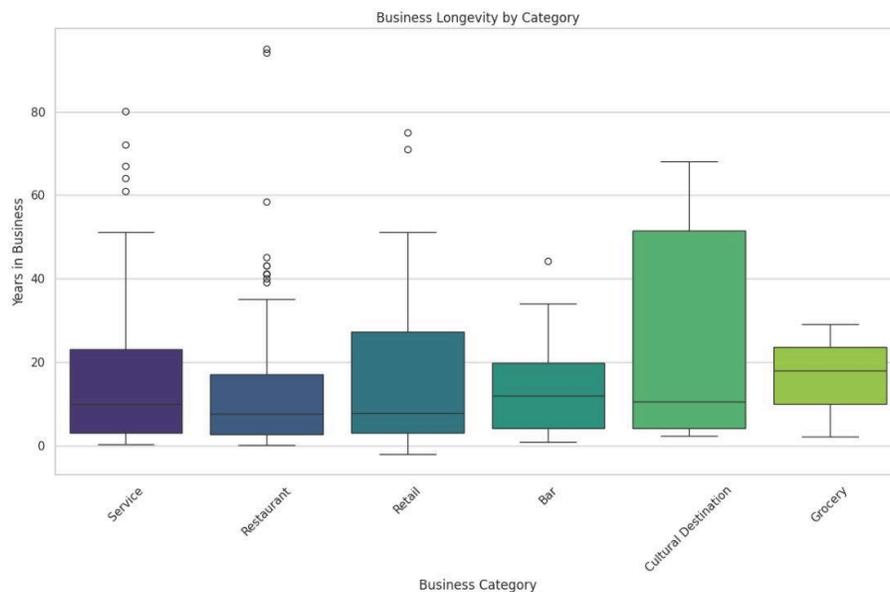


Figure 3

Figure 3 highlights several critical trends. First, retail stores and restaurants have the lowest median longevity. More necessary businesses, such as grocery stores and service businesses, are more stable and tend to be in business longer. These businesses are a constant in communities, as changing tastes and popular trends don't affect a community's need for a grocery store or a laundromat. We also observed as many outlier restaurants as the rest of the categories combined. Because of this, we decided to look more into the restaurants of Downtown Chapel Hill.

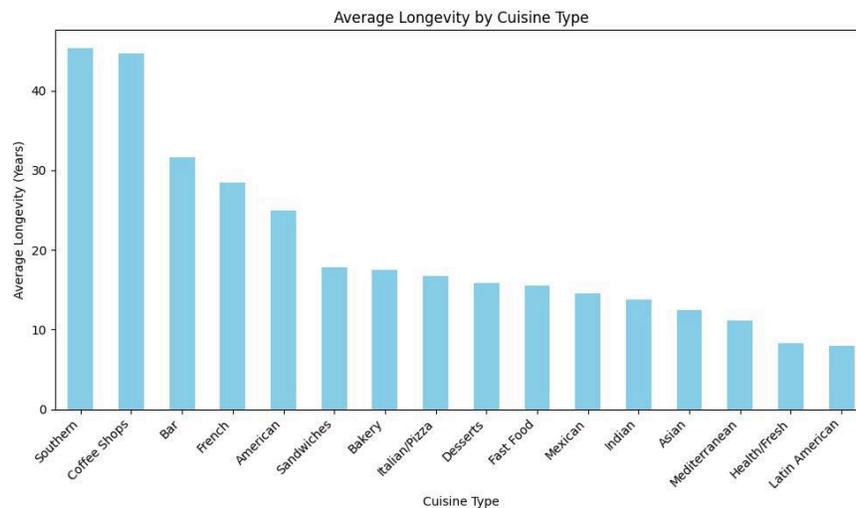


Figure 4

Figure 4 emphasizes the popularity of Southern restaurants and coffee shops. This is due to the large population of college students, especially those from the South, as over 80% of UNC's student body is from North Carolina. The culture of Chapel Hill is a Southern United States college town, so it makes sense that Southern restaurants and coffee shops have had the most success in Chapel Hill. Also, bars are a major part of college towns nationwide, and it's no different in Chapel Hill. While this graph helps contextualize the success of restaurants in Chapel Hill, it doesn't paint the whole picture. For example, health/fresh restaurants are a newer trend, so they haven't had the time to accumulate the longevity of some of these other restaurants. However, they are still important and valued by many college students. Prospective business owners must acknowledge this when considering opening such a restaurant, as they can find a market and succeed.

Since our dataset contained latitude and longitude, we created various map visualizations to help analyze this dataset.

### Open Businesses in Downtown Chapel Hill by Category

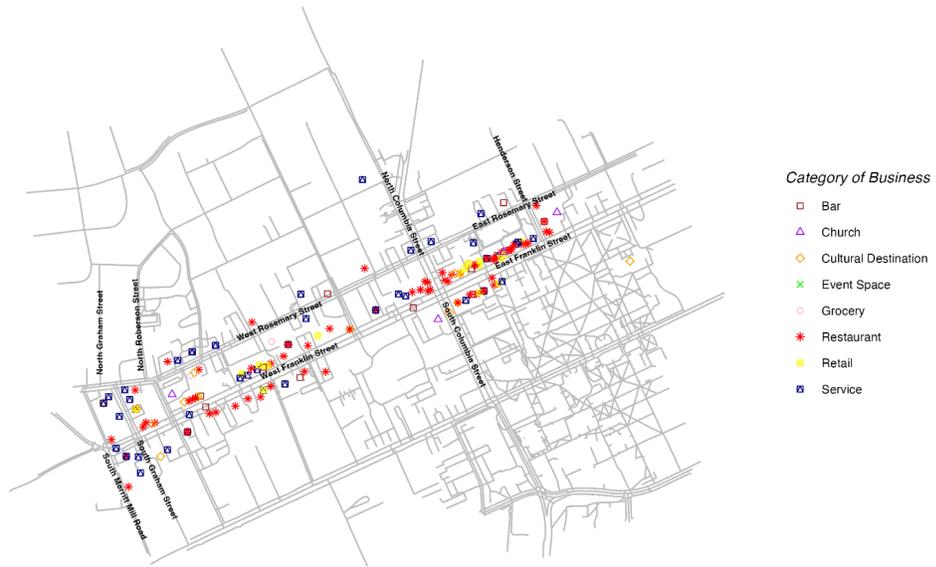


Figure 5

### Storefront locations in downtown Chapel Hill by business closures



Figure 6

Independent Versus Chain Businesses in Downtown Chapel Hill



Figure 7

Figure 5 shows the large clump of restaurants, bars, and retail stores on East Franklin Street. This is right next to UNC Chapel Hill's campus, and looking at Figure 7, we can see that many of these stores are part of a chain. It's not surprising that the cheaper chain restaurants and chain college merchandise stores are located right off campus, making them easily accessible for students. Furthermore, closer to Carrboro, there is a pocket of service businesses. The difference in the population in Eastern vs Western Chapel Hill can explain this disparity. The median age of Chapel Hill is 25.6 years<sup>3</sup>, compared to 33.1<sup>4</sup> for Carrboro. As Carrboro is located directly west of Chapel Hill, businesses in Western Chapel Hill need to cater to the older population of Carrboro. Service businesses such as laundromats and gyms aren't targeted at students, as on-campus dormitories have laundry machines and students can freely access any of UNC-Chapel Hill's gyms. Since many college students live on campus and don't have cars, businesses marketing to students must be within walking distance of campus or they won't be

<sup>3</sup> "Chapel Hill, NC | Data USA." *Datausa.io*, 2022, [datausa.io/profile/geo/chapel-hill-nc](https://datausa.io/profile/geo/chapel-hill-nc). Accessed 7 Nov. 2024.

<sup>4</sup> "Carrboro, NC | Data USA." *Datausa.io*, 2022, [datausa.io/profile/geo/carrboro-nc](https://datausa.io/profile/geo/carrboro-nc). Accessed 7 Nov. 2024.

able to stay in business. Looking at Figure 7, we can see the disparity between independent and chain businesses in both the Western and Eastern districts of Chapel Hill. Since college students aren't making much money, if any, they are more likely to gravitate towards cheap, chain restaurants. In contrast, the older residents with stable incomes in Carrboro may desire nicer, non-chain places to eat.

Looking at Figures 5 and 6, we can observe that many of the locations in Downtown Chapel Hill that have experienced the most business turnover are located in that same clump of restaurants, retail stores, and bars on East Franklin Street. This is consistent with the results of Figure 3, as restaurants and retail stores tend to have the lowest median longevity. Thousands of students graduate from and enroll at the university each year, causing the population of Chapel Hill to be in constant flux. With students constantly entering and leaving Chapel Hill, the tastes of the student body can change, leading to businesses potentially losing popularity and being phased out, replaced by trendier options. The area with the most turnover is right next to UNC-Chapel Hill's campus, furthering the idea that a changing student body leads to changing demand.

## **Conclusion**

There are many avenues that we could pursue to further our analysis. Access to profit data would help us define a successful business and strengthen our recommendations. Due to the time constraint of a five-minute presentation, we didn't have an opportunity to perform a deeper dive into each category. We touched on deeper analysis with restaurants, but we are interested in expanding that by looking at where different types of restaurants are located to help prospective restaurant owners minimize competition. This analysis can be used with various kinds of

businesses within other categories, such as retail stores and service businesses. We could look at Figure 5 through the years, seeing how the landscape of Downtown Chapel Hill has changed over time, and see if we can predict how it will continue to change, so we can give ahead-of-the-curve recommendations.

From our data, we found that Western Downtown Chapel Hill has tapped more into the population of Carrboro than the UNC-Chapel Hill student body, resulting in more service businesses and independent restaurants, compared to the retail stores, chain restaurants, and bars of Eastern Downtown Chapel Hill. The Southern United States college town culture of Chapel Hill is abundantly clear, headlined by the success of Southern restaurants and coffee shops. Restaurants and retail businesses are the dominant categories in terms of the number of businesses. Predictably, due to their changing market, they tend to be in business for the shortest time.

## **Recommendation**

We welcome prospective business owners to Chapel Hill, as there is an incredible opportunity to capitalize on a growing population. We recommend that prospective business owners fully grasp their target market before deciding where in Chapel Hill to open their business. If an entrepreneur is interested in the college student market, proximity to campus is crucial for business success, especially if they expect significant competition. College students are pressed for time, and many would want to avoid walking ten extra minutes to a store that sells similar products to the one closest to campus. We recommend that prospective business owners seeking to open cheaper, chain restaurants, retail stores selling college merchandise, and bars try to open as close to the campus of UNC-Chapel Hill as possible. Suppose a prospective

business owner is more interested in opening a necessary community building block, such as a service business or grocery store, or a more expensive, nicer restaurant. In that case, we recommend choosing a location closer to Carrboro.

*Generative AI was leveraged to brainstorm ideas and assist with the creation of visualizations.*