Analysis of Profitable Arcade Locations within Philadelphia

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Introduction: For this project, I decided to investigate Philadelphia and the arcades within it. By looking at the distribution of arcades around Philadelphia, I can glean the places that anyone looking to open a new arcade would be getting competition, and where it would most likely be appreciated. This research would greatly help anyone looking to build arcades or other similar gaming related businesses within Philadelphia, and would provide them important information to keep in mind all throughout the decision-making process

Data: To complete this project, I used Foursquare’s location data to determine the closest arcades and game related venues. I first gathered data on arcades within Philadelphia and noticed that there were less than 10 marked venues. Since there was ample data showing the distribution of existing arcades in Philadelphia, I gathered a second set of data on all game related venues in Philadelphia. This would be able to provide me with geographic locations that might show interest in having an arcade close by.

Methodology: Initially, I used Foursquare’s API system to draw a list of arcade venues within the city of Philadelphia to gauge interest and competition. The data required a little bit of cleanup due to venues with arcade in their names but were unrelated. After analyzing the data, there appeared to be decent geographic separation between the venues. Although this data provided the knowledge of where arcades are currently established in Philadelphia, there was no indication of where a new arcade *should* be established, besides not where one already is.

To remedy this, I generated a second list, this time querying anything with “game” in the name or category, since I believe this list can show where local interest in an arcade can lie. I believe patrons of game related venues would be interested in a community area to share their interests with retro and new age games, allowing old and new fans alike to find a place to learn more from each other and interact with other members of the community.

Using the Geopy.Geocoders and Folium libraries, I mapped the results to get a better visualization of the data. Using this approach, I was able to get a clearer picture of where the data fell and can draw more applicable ideas and conclusions.

Results: According to the data, it appears that there are a few of arcades centralized within the center of Philadelphia, but that there are a couple more outside of that region. The original dataset contained 7 results, which were restricted down to 5 due to irrelevance. 60% of these results were based in Center City Philadelphia.

Similarly, after cleaning the game related venue data, there were 21 venues in the final dataset. Of these, 66.7% of the venues were focused in Center city. The remaining 7 venues were distributed as 2 in West Philadelphia, 2 in North Philadelphia, and 3 in South Philadelphia. This distribution is important because the 2 game related venues in North Philadelphia lie around one of the two outlier arcades from the first dataset.

Discussion: After reviewing the distribution of both datasets using the Folium map, there appears to be a trend, albeit insignificant, between gaming related venues and arcade locations. 40% (2) of the arcades do not show a tendency of being close to a gaming related venue, although one of these is located nearby a school, which could indicate a market for younger people to go to an arcade.

Keeping this in mind, there are two main locations I would suggest for a new arcade. The first is in West Philadelphia, as there are no arcades in sight, but have 2 gaming related locations nearby. This implies an interest in gaming related venues and could prove profitable for a new arcade location. The second location would be South Philadelphia, where 3 gaming related locations form an almost perfect triangle. There is clear interest in gaming related venues for three of them to be near one another, and thus I believe opening an arcade in this general location would prove to be successful.

Conclusion: This undertaking shed some interesting insight into the distribution of arcades and game related venues within Philadelphia. Although it was able to unravel some mysteries, I believe there are some hindrances that prevented this project from being as good as it could have been. For one, the findings are only as strong as the records are within Foursquare’s API system. Several the locations I found through the API I searched on Google Maps, and was unable to find any hits. Additionally, the findings are limited by the venues’ naming and category structure within Foursquare. If there was an arcade or game related venue that was categorized as something else, such as a restaurant or bar, and the name of the venue did not have any indication of the nature of the venue (such as Dave & Buster’s, a popular restaurant/arcade) then they would not have appeared within the queried datasets.

Keeping these issues in mind, we would only be able to handle those exceptions by knowing every one of those outlier cases, which is why I believe this analysis is a good first step towards solving the problem initially brought forth.