



LIMA

La ciudad de los Reyes

**ANALYZING BUSINESS
OPPORTUNITIES IN LIMA**

FINAL REPORT CAPSTONE
PROJECT

SHOWING POTENTIAL SPOTS FOR BUSINESS DEVELOPMENT IS A KEY INPUT FOR NEW ENTREPRENEURS

- Start –up companies, most of the time, are struggling with taking the final decision related to where locate their new business.
- In Lima, one of the largest city in Latam, is difficult to find reliable information about market activity. Also, is necessary to increase the quality of the scarce source of information available in public web sites and official web sites. Entrepreneurs need reliable key inputs to design their business model and to invest in what they believe would be profitable.
- Because of that, providing a cluster segmentation analysis, in which they can identify the diversity of competitors per district in Lima, is a valuable tool.

DATA ACQUISITION AND CLEANING

- Extracting demographic data per Lima' districts from public website. Then scrapping some data and cleaning formats. And finally converting some datatypes.

This dataset exists for free on the web. Link to the dataset is:

[https://es.wikipedia.org/wiki/Anexo:Distritos de Lima#Distritos de Lima](https://es.wikipedia.org/wiki/Anexo:Distritos_de_Lima#Distritos_de_Lima)

Data size = 172, data shape (43,4)

Data Type converted: Distritos object; Área float64; Población float64; Densidad object; dtype: object

- Generating Lima districts' coordinates and converting from DMS (degrees, minutes and seconds) to decimal degrees. Then creating a Dataframe based on that information.

This dataset exists for free on the web. Link to the dataset is:

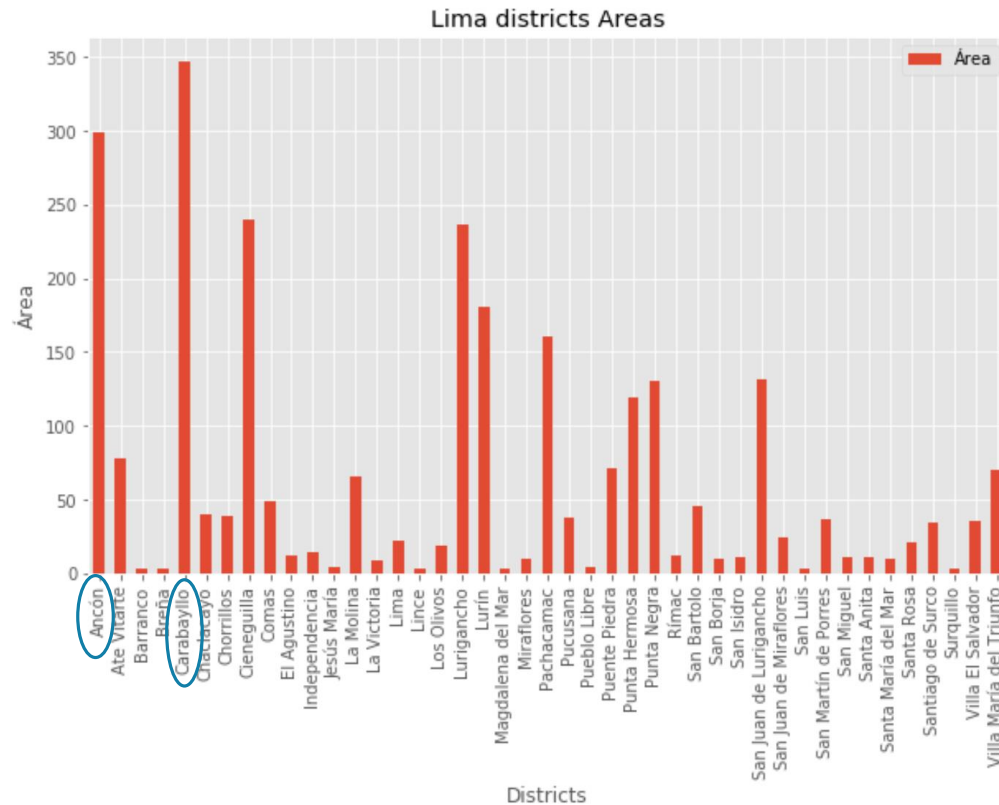
<https://www.antipodas.net/coordenadaspais/peru/lima.php>

Data size = 172, data shape (43,4)

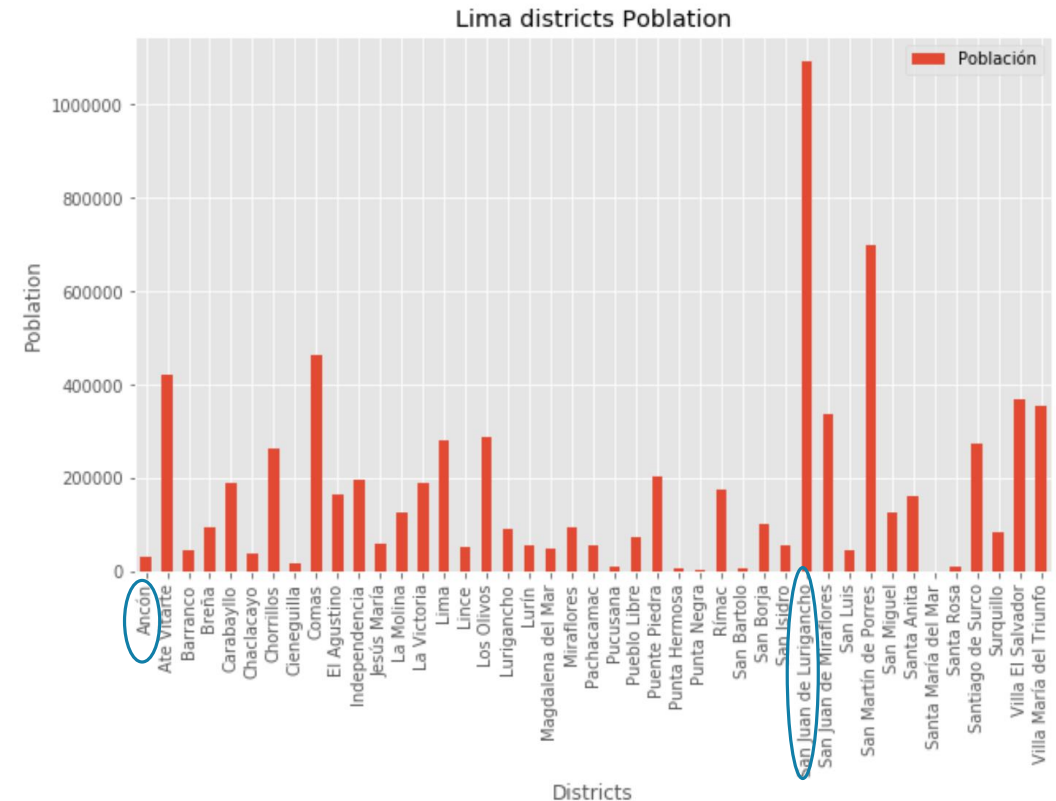
Data Type converted: PostCode object; District object; Latitude float64; Longitude float64; dtype: object

DEMOGRAPHIC AND GEOGRAPHIC COMPOSITION IN LIMA DISTRICTS

Lima districts per area



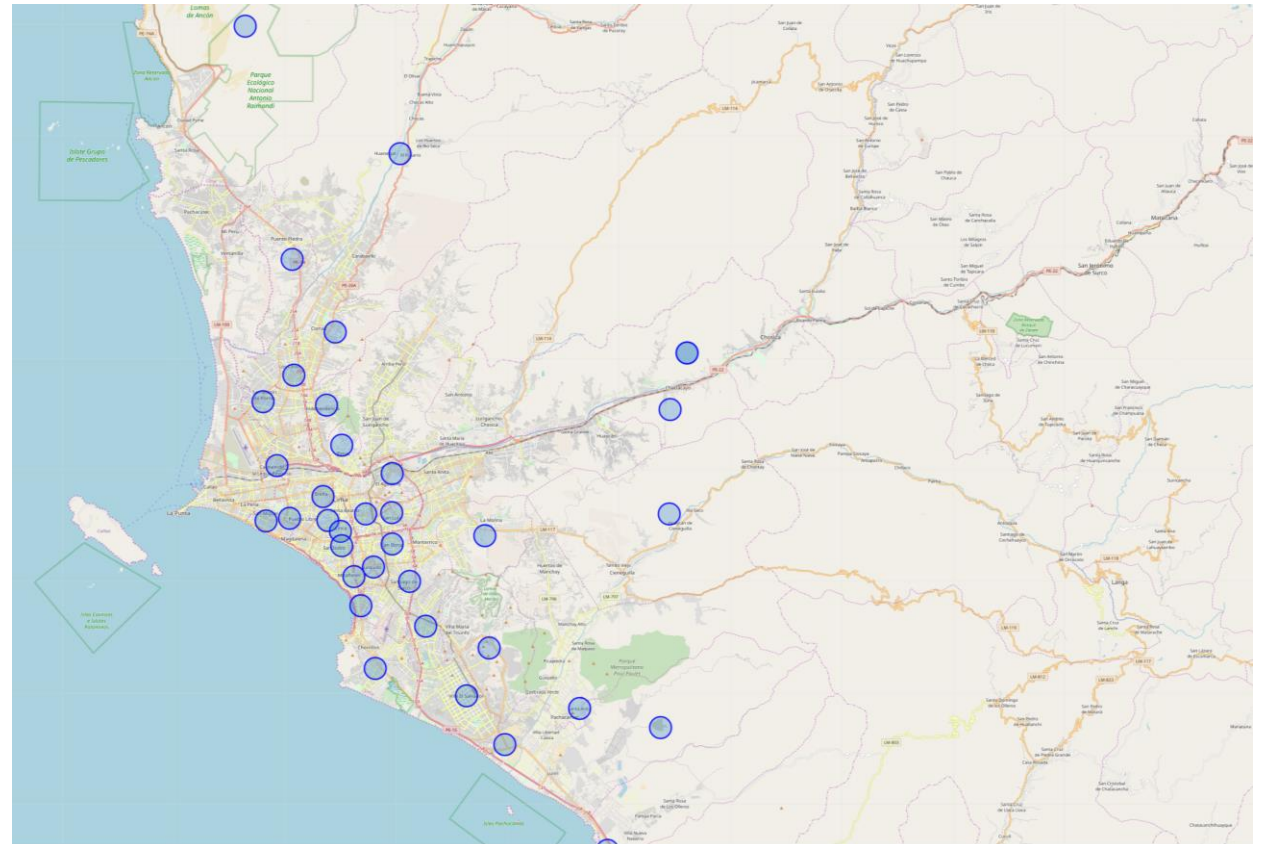
Lima districts per poblacion density



If we establish a correlation analysis we could see that there is no relationship between area and density in each Lima district.

DETERMINING LIMA DISTRICTS LOCATION

	PostCode	District	Latitude	Longitude
0	Lima01	Lima	-14.046071	-75.704294
1	Lima02	Ancon	-11.696553	-77.111654
2	Lima03	Ate Vitarte	-14.046071	-75.704294
3	Lima04	Barranco	-12.143959	-77.020227
4	Lima05	Breña	-12.059700	-77.050118
5	Lima06	Carabayllo	-11.794993	-76.989292
6	Lima07	Comas	-11.932861	-77.040674
7	Lima08	Chaclacayo	-11.992479	-76.776176
8	Lima09	Chorrillos	-12.192349	-77.008962
9	Lima10	El Agustino	-12.042052	-76.995714
10	Lima11	Jesús María	-12.078186	-77.046411
11	Lima12	La Molina	-12.090176	-76.922337
12	Lima13	La Victoria	-12.073357	-77.016417



GETTING VENUES IN LIMA TO START OUR ANALYSIS

Dataframe created considering a radius = 2000 and a limit = 100.

	District	District Latitude	District Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Lima	-14.046071	-75.704294	Restaurante Don Cecilio	-14.046542	-75.700629	Fast Food Restaurant
1	Lima	-14.046071	-75.704294	Panaderia Iuchito	-14.046769	-75.708371	Bakery
2	Ate Vitarte	-14.046071	-75.704294	Restaurante Don Cecilio	-14.046542	-75.700629	Fast Food Restaurant
3	Ate Vitarte	-14.046071	-75.704294	Panaderia Iuchito	-14.046769	-75.708371	Bakery
4	Barranco	-12.143959	-77.020227	FUGA	-12.144419	-77.022005	Nightclub
5	Barranco	-12.143959	-77.020227	Pizzerria La Linterna	-12.144713	-77.021933	Pizza Place
6	Barranco	-12.143959	-77.020227	Amoramar	-12.144075	-77.018201	Seafood Restaurant
7	Barranco	-12.143959	-77.020227	Sargento Pimienta	-12.143782	-77.018755	Bar
8	Barranco	-12.143959	-77.020227	DaDA	-12.145049	-77.022843	Bar
9	Barranco	-12.143959	-77.020227	Belgicius	-12.141295	-77.021437	Belgian Restaurant
10	Barranco	-12.143959	-77.020227	La Espiga de Oro	-12.142968	-77.022081	Bakery
11	Barranco	-12.143959	-77.020227	Hotel B	-12.142954	-77.023266	Hotel
12	Barranco	-12.143959	-77.020227	Sandwiches Monstruos	-12.141153	-77.021764	Sandwich Place
13	Barranco	-12.143959	-77.020227	Canta Ranita	-12.146824	-77.021059	Seafood Restaurant
14	Barranco	-12.143959	-77.020227	Arepa Café	-12.145220	-77.021768	Arepa Restaurant

IDENTIFYING DISTRICTS WITH GREATER NUMBER OF VENUES

	District Latitude	District Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
District						
Jesús María	53	53	53	53	53	53
Lince	71	71	71	71	71	71
➡ Miraflores	76	76	76	76	76	76
➡ San Isidro	94	94	94	94	94	94
➡ Barranco	100	100	100	100	100	100

If we consider a top 3 districts based on the above table, we can suggest that Barranco, San Isidro and Miraflores are the most demanded zones for making businesses.

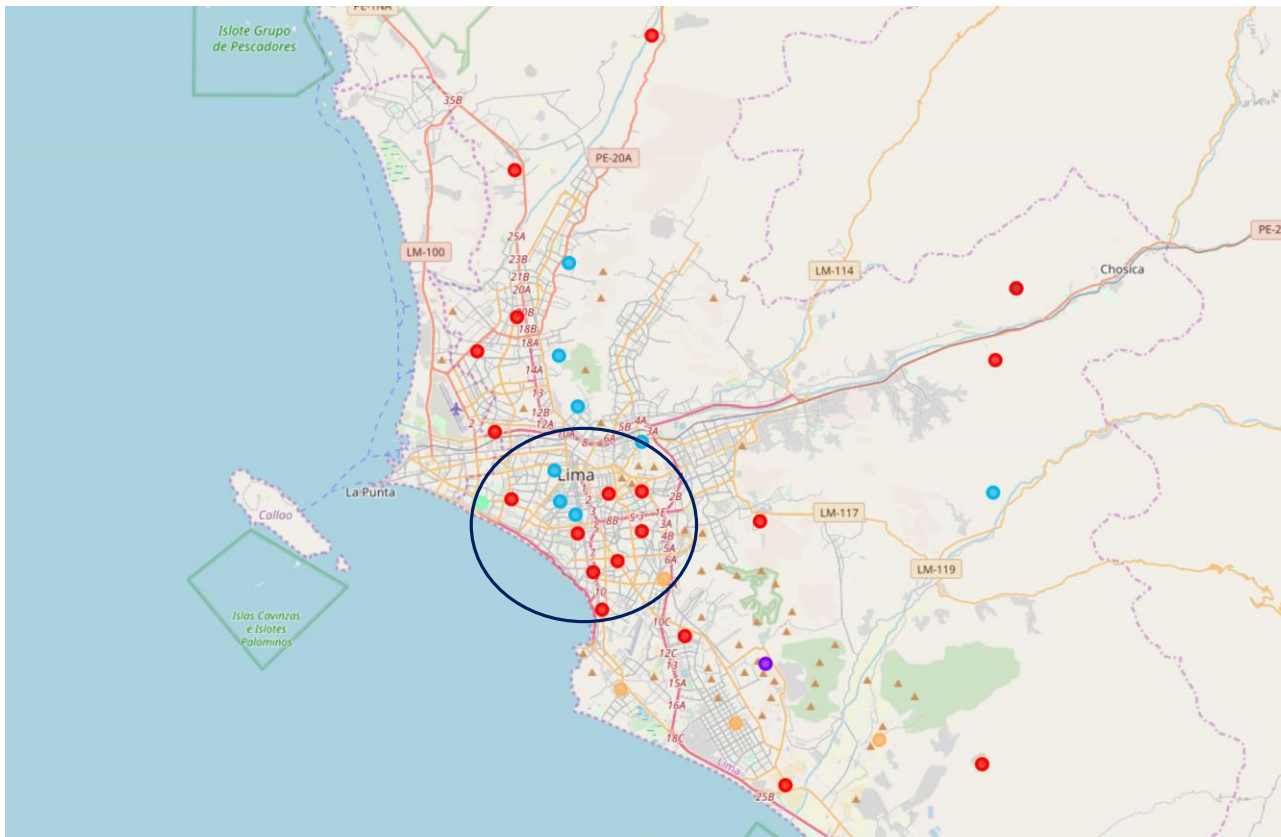
GETTING DATA RELATED TO THE MOST COMMON VENUES IN EACH DISTRICT, PRESENTED BY SECTORS

From the 1st most common venue to the 10th most common venue



District	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Ate Vitarte	Pizza Place	Fast Food Restaurant	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Farmers Market	Farm	Falafel Restaurant	Electronics Store
Barranco	Bar	Seafood Restaurant	Burger Joint	Café	Pizza Place	Restaurant	Breakfast Spot	Sandwich Place	Peruvian Restaurant	Bakery
Breña	Fast Food Restaurant	South American Restaurant	Restaurant	Peruvian Restaurant	Pharmacy	Grocery Store	Fried Chicken Joint	Electronics Store	Farmers Market	Farm
Carabayllo	Chinese Restaurant	Yoga Studio	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant
Chorrillos	Hostel	Beer Garden	Clothing Store	Restaurant	Gas Station	Falafel Restaurant	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market
Comas	Department Store	Park	Shopping Mall	Movie Theater	Yoga Studio	Falafel Restaurant	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm
El Agustino	Fried Chicken Joint	Café	Yoga Studio	Falafel Restaurant	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Event Space
Jesús María	Peruvian Restaurant	Seafood Restaurant	Park	BBQ Joint	Burger Joint	Restaurant	Boutique	Sandwich Place	Chinese Restaurant	Café
La Molina	Park	Yoga Studio	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant
La Victoria	BBQ Joint	Bus Stop	Furniture / Home Store	Clothing Store	Yoga Studio	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm
Lima	Pizza Place	Fast Food Restaurant	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Farmers Market	Farm	Falafel Restaurant	Electronics Store
Lince	Seafood Restaurant	Chinese Restaurant	Nightclub	Fried Chicken Joint	Restaurant	Bar	Peruvian Restaurant	Vegetarian / Vegan Restaurant	Burger Joint	Spa
Los Olivos	Pet Store	Latin American Restaurant	Yoga Studio	Event Space	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant
Miraflores	Hotel	Seafood Restaurant	Coffee Shop	Café	Bar	Sandwich Place	Cocktail Bar	Peruvian Restaurant	Ice Cream Shop	Bookstore
Pachacamac	Farm	History Museum	Yoga Studio	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Falafel Restaurant
Pucusana	Beach	Harbor / Marina	Park	Italian Restaurant	Cajun / Creole Restaurant	Bed & Breakfast	Yoga Studio	Farm	Food	Fish & Chips Shop
Pueblo Libre	Park	Sandwich Place	Seafood Restaurant	Burger Joint	Gym / Fitness Center	Fried Chicken Joint	Korean Restaurant	Soccer Field	Shopping Mall	Bookstore
Punta Hermosa	Seafood Restaurant	Beach	Sandwich Place	Bakery	Italian Restaurant	New American Restaurant	Restaurant	Cafeteria	Pizza Place	Farmers Market
Punta Negra	Nightclub	Plaza	Other Great Outdoors	Fried Chicken Joint	Restaurant	Beach	Electronics Store	Fast Food Restaurant	Farmers Market	Farm

IDENTIFYING DISTRICTS WITH GREATER NUMBER OF VENUES



- We can see that the major clusters are located in the zone under the circle.
- That zone is represented by the districts of Miraflores, San Isidro, San Borja and Lince. The attractiveness of that spots were identified in the table related to The greater number of venues.
- It seems that in those areas the law of demand and Supply is given investors good signals.

CLUSTER ANALYSIS

Cluster 0 - Most common venues: Hotel, Seafood Restaurant, Peruvian Restaurant and Fast Food Restaurant

PostCode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
Lima01	Pizza Place	Fast Food Restaurant	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Farmers Market	Farm	Falafel Restaurant	Electronics Store
Lima03	Pizza Place	Fast Food Restaurant	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Farmers Market	Farm	Falafel Restaurant	Electronics Store
Lima04	Bar	Seafood Restaurant	Burger Joint	Café	Pizza Place	Restaurant	Breakfast Spot	Sandwich Place	Peruvian Restaurant	Bakery
Lima06	Chinese Restaurant	Yoga Studio	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant
Lima08	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Lima12	Park	Yoga Studio	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant
Lima13	BBQ Joint	Bus Stop	Furniture / Home Store	Clothing Store	Yoga Studio	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm
Lima16	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Lima18	Hotel	Seafood Restaurant	Coffee Shop	Café	Bar	Sandwich Place	Cocktail Bar	Peruvian Restaurant	Ice Cream Shop	Bookstore
Lima19	Farm	History Museum	Yoga Studio	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Falafel Restaurant
Lima20	Beach	Harbor / Marina	Park	Italian Restaurant	Cajun / Creole Restaurant	Bed & Breakfast	Yoga Studio	Farm	Food	Fish & Chips Shop
Lima21	Park	Sandwich Place	Seafood Restaurant	Burger Joint	Gym / Fitness Center	Fried Chicken Joint	Korean Restaurant	Soccer Field	Shopping Mall	Bookstore
Lima22	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Lima23	Nightclub	Plaza	Other Great Outdoors	Fried Chicken Joint	Restaurant	Beach	Electronics Store	Fast Food Restaurant	Farmers Market	Farm
Lima24	Seafood Restaurant	Beach	Sandwich Place	Bakery	Italian Restaurant	New American Restaurant	Restaurant	Cafeteria	Pizza Place	Farmers Market
Lima26	Seafood Restaurant	Nightclub	Pizza Place	Italian Restaurant	Peruvian Restaurant	Restaurant	Burger Joint	Scandinavian Restaurant	Park	Playground
Lima27	Peruvian Restaurant	Hotel	Italian Restaurant	Café	Sushi Restaurant	Restaurant	Coffee Shop	Seafood Restaurant	Latin American Restaurant	Salad Place
Lima29	Seafood Restaurant	Restaurant	Health & Beauty Service	Light Rail Station	Chinese Restaurant	Farmers Market	Soccer Field	Event Space	Fish & Chips Shop	Fast Food Restaurant
Lima30	Restaurant	Seafood Restaurant	BBQ Joint	Peruvian Restaurant	Auto Garage	Breakfast Spot	Park	Farmers Market	Intersection	Bakery
Lima31	BBQ Joint	Seafood Restaurant	Yoga Studio	Food Stand	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm
Lima34	Café	Soccer Field	Fast Food Restaurant	Shopping Mall	Supermarket	Park	Food Court	Coffee Shop	Sporting Goods Shop	Dessert Shop
Lima36	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
Lima38	Skate Park	Café	Yoga Studio	Falafel Restaurant	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Event Space
Lima39	Pet Store	Latin American Restaurant	Yoga Studio	Event Space	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant
Lima41	Gym	Peruvian Restaurant	Convenience Store	Athletics & Sports	Pool	Chinese Restaurant	Fried Chicken Joint	Park	Dessert Shop	Pharmacy

1, 2 and 3 are Barranco, Miraflores and San Isidro, respectively.

CLUSTER ANALYSIS

Cluster 1 - Most common venues: Pharmacy and Event Space

	PostCode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
34	Lima35	Pharmacy	Event Space	Food & Drink Shop	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant	Electronics Store

Lima 35 is “Villa Maria del Triunfo” and is located far from the center of Lima.

Cluster 2 - Most common venues: Fast Food Restaurant, Peruvian Restaurant and Department Store

	PostCode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
4	Lima05	Fast Food Restaurant	South American Restaurant	Restaurant	Peruvian Restaurant	Pharmacy	Grocery Store	Fried Chicken Joint	Electronics Store	Farmers Market	Farm
6	Lima07	Department Store	Park	Shopping Mall	Movie Theater	Yoga Studio	Falafel Restaurant	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm
9	Lima10	Fried Chicken Joint	Café	Yoga Studio	Falafel Restaurant	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Event Space
10	Lima11	Peruvian Restaurant	Seafood Restaurant	Park	BBQ Joint	Burger Joint	Restaurant	Boutique	Sandwich Place	Chinese Restaurant	Café
13	Lima14	Seafood Restaurant	Chinese Restaurant	Nightclub	Fried Chicken Joint	Restaurant	Bar	Peruvian Restaurant	Vegetarian / Vegan Restaurant	Burger Joint	Spa
14	Lima15	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
16	Lima17	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
24	Lima25	American Restaurant	Seafood Restaurant	Soccer Field	Pizza Place	Dance Studio	Falafel Restaurant	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market
27	Lima28	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
36	Lima37	Beach	Campground	Pool	Italian Restaurant	Yoga Studio	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm
39	Lima40	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN

Lima 05, 07, 10 and 11 are represented by Breña, Comas, El Agustino and Lince respectively, and those zones are closer to the center of the city.

CLUSTER ANALYSIS

Cluster 3 - Most common venues: Seafood Restaurant and Chinese Restaurant

	PostCode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
31	Lima32	Seafood Restaurant	Chinese Restaurant	Dance Studio	Pizza Place	Playground	Sandwich Place	Restaurant	Martial Arts Dojo	Soccer Field	Soccer Stadium

Lima 32 is “San Miguel” and is located in the coast and closer to the airport and seaport. That’s might be a factor to develop seafood restaurants in the zone.

Cluster 4 - Most common venues: Hostel, Bar and Chinese Restaurant

	PostCode	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
1	Lima02	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
8	Lima09	Hostel	Beer Garden	Clothing Store	Restaurant	Gas Station	Falafel Restaurant	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market
32	Lima33	Park	Chinese Restaurant	Bakery	BBQ Joint	Restaurant	Fast Food Restaurant	Middle Eastern Restaurant	Italian Restaurant	Fried Chicken Joint	Ice Cream Shop
41	Lima42	Bar	Pizza Place	Dive Bar	Food	Market	Gym	Electronics Store	Fish & Chips Shop	Fast Food Restaurant	Farmers Market
42	Lima43	Park	Moving Target	Yoga Studio	Event Space	Food	Fish & Chips Shop	Fast Food Restaurant	Farmers Market	Farm	Falafel Restaurant

Lima 09 and 33 are “Chorrillos” and “Santiago de Surco”, respectively. In those zones the most important businesses are Hostels and Chinese Restaurants.

CONSLUSIONS AND RECOMMENDATIONS

- We can conclude that the cluster N°01 is the hot zone in which any investor can find attractive to start a new business.
- The cluster N° 01 is located very close to the center of the city and is mainly represented by restaurants. We can find that the majority of businesses are related to seafood restaurants and hotels. That evidence might be correlated with the transit of tourist in that zone.
- In the whole market, we have perceived that investing in a restaurant is common activity in Lima. That evidence would suggest that this sector is profitable and is not completely developed.
- In order to get more accuracy in our analysis, I strongly recommend to incorporate correlation among demographic factors such as income level, age, gender and education level. By analyzing those factors we can stablish with more certainty that the cluster N°1 is the best.