



Cafe Business Opportunities in Finland?

STUDY REPORT

How do Finnish cities appear to someone willing to start a new café in Finland?

- ▶ This is a report of a study that answers the title question
- ▶ Read this to find out in more detail
 - ▶ Characteristics of Finnish cities
 - ▶ Café related factors in Finland
- ▶ Who should care:
 - ▶ Anyone with an entrepreneurial spirit and café business creation intentions

Data

This study and results are based on two major, freely available datasets

- ▶ Paavo dataset:
 - ▶ statistical data on postal code area level (inhabitants ages, education, income, jobs, households etc)
 - ▶ Published by Statistics Finland
 - ▶ 3026 postal code areas in Finland, 105 variables (in 8 groups) of information on each postal code area
- ▶ Venue dataset:
 - ▶ Venue location and category information
 - ▶ Available from Foursquare service
 - ▶ 17 702 distinct venues in Finland, in 461 unique venue categories

Process

- ▶ Data was gathered, confirmed, merged together and turned around multiple times
- ▶ Machine learning methods like clustering (find common characteristics of postal code areas) and linear regression (propose potential areas to check out for new café businesses)
- ▶ Statistical analysis: what things relate to the amounts of cafes in certain areas in Finland
- ▶ Summaries: how do cities compare to each other as environments

Results

- ▶ Postal Code Area analysis (this will build up to understanding the cities)
- ▶ Top 20 cities in Finland – Via numbers
- ▶ Correlations of Café amounts and other data features (like inhabitant age)
- ▶ Predictions

Results: Postal Code Areas in 5 groups

PC cluster	PC cluster count	Surface area	Average area per PC (km2)	Inhabitants, total, 2017 (HE)	Average inhabitants per PC	Inhabitants per km2	Venues Total	Inhabitants per venue	Cafes Total	Average Cafes per PC	Inhabitants per cafe	Restaurants Total	Average Restaurants per PC	Inhabitants per restaurant
1	320	24,709.59	77.22	352310	1,100.97	14.26	3539	99.55	203	0.63	1,735.52	527	1.65	668.52
2	204	3,865.58	18.95	1021772	5,008.69	264.33	5088	200.82	245	1.20	4,170.50	885	4.34	1,154.54
3	71	1,113.90	15.69	941736	13,263.89	845.44	4523	208.21	671	9.45	1,403.48	1402	19.75	671.71
4	63	1,762.63	27.98	355671	5,645.57	201.78	5509	64.56	940	14.92	378.37	1867	29.63	190.50
5	19	221.30	11.65	165421	8,706.37	747.49	2564	64.52	614	32.32	269.42	704	37.05	234.97

PC cluster	Venues Total	Cafes Total	Restaurants Total	Most Common Venue #1	Most Common Venue #2	Most Common Venue #3	Most Common Venue #4	Most Common Venue #5	Most Common Venue #6	Most Common Venue #7	Most Common Venue #8	Most Common Venue #9	Most Common Venue #10
1	3539	203	527	Grocery Store	Supermarket	Café	Pizza Place	Restaurant	Hotel	Lake	Beach	Campground	Bus Stop
2	5088	245	885	Bus Stop	Grocery Store	Supermarket	Pizza Place	Café	Fast Food Restaurant	Park	Restaurant	Soccer Field	Bar
3	4523	671	1402	Café	Pizza Place	Bar	Grocery Store	Fast Food Restaurant	Restaurant	Coffee Shop	Pub	Bus Stop	Supermarket
4	5509	940	1867	Café	Bar	Pizza Place	Restaurant	Fast Food Restaurant	Coffee Shop	Pub	Scandinavian Restaurant	Sandwich Place	Grocery Store
5	2564	614	704	Café	Bar	Coffee Shop	Scandinavian Restaurant	Pub	Beer Bar	Restaurant	Park	Gastropub	Sushi Restaurant

Results: Analysis of Postal Code Areas

On previous data:

- ▶ Cluster 1 presents postal code areas, which are on average quite large (surface area), and small in population. They do not offer much café nor restaurant services compared to the population. Most common venues are about shopping, and the top 10 includes even likes of lakes, beaches and camping areas. Altogether, this cluster represents somewhat rural areas...
- ▶ Cluster 2 appears as a 'sleeping' neighborhood, typical around bigger cities (average population density, not many venues nor interesting venues...)

Results: Analysis of Postal Code Areas

On previous data, continued:

- ▶ Cluster 5 presents on average quite small postal code areas (surface area), but they are among the most densely populated areas in Finland. There are a lot of venue offerings centered in these small areas, and the top 10 venue categories are about cafes, bars and restaurants. There even some fine specialty venue types in top 10: sushi restaurants, gastropubs, beer bars and scandinavian restaurants. Altogether, this cluster represents very urban context, active big city centers.
- ▶ Clusters 3 and 4 represent central areas of midsize cities, 3 having most densely populated area but 4 having a lot more venue offerings...

The numbers - Top 20 cities in Finland

City	Surface area	Inhabitants, total, 2017 (HE)	Venues Total	Cafes Total	Restaurants Total	Average age of inhabitants, 2017 (HE)	With education, total, 2017 (KO)	Academic degree - Higher level university degree, 2017 (KO)	Average income of inhabitants, 2016 (HR)	Average size of households, 2017 (TE)	Average income of households, 2016 (TR)	Free-time residences, 2017 (RA)	Average floor area, 2017 (RA)	Workplaces, 2016 (TP)	Employed, 2016 (PT)	Unemployed, 2016 (PT)	Students, 2016 (PT)	Pensioners, 2016 (PT)
Helsinki	213.17	628760	5347	838	1417	40.27	405319	109449	29,729.71	1.95	49,062.36	402	68.54	358148	297219	38834	46639	122330
Espoo	355.41	273029	2078	246	526	38.04	166765	49235	32,666.04	2.33	59,111.33	1881	88.08	106230	126010	13693	21995	44233
Tampere	753.11	223117	1750	266	421	41.59	150606	27226	24,286.94	1.92	39,198.62	3481	74.31	107222	93289	19621	21429	49175
Vantaa	239.87	215273	1359	129	272	38.71	122147	17165	26,256.80	2.21	46,312.91	680	79.66	100705	99901	13013	15037	38263
Oulu	2,613.83	199340	1073	103	305	38.18	127457	22201	23,622.79	2.20	40,069.69	4003	85.97	75211	80996	15871	20161	37981
Turku	293.88	188966	1395	238	375	41.85	124311	21638	23,195.54	1.92	37,781.81	2555	77.17	88634	79024	14860	17677	45016
Jyväskylä	1,307.83	139297	831	116	211	39.28	92484	14873	22,767.59	2.13	38,406.44	3479	82.69	56652	57012	11230	14779	29056
Kuopio	3,733.02	115608	778	61	172	43.44	76197	10167	22,944.82	2.12	39,847.44	9300	89.71	42134	47923	7463	10800	28719
Lahti	466.25	112303	769	93	215	42.31	67908	7090	23,218.97	2.04	38,479.10	1835	82.35	44929	44031	9323	8296	30756
Pori	1,162.82	83485	465	29	104	44.90	51703	4657	22,341.97	2.03	37,457.73	4837	88.65	31455	31752	7076	6030	24532
Kouvola	2,417.53	79235	580	52	126	46.68	48073	3934	21,888.97	1.99	36,768.89	5563	90.95	27602	30325	5964	5019	25351
Joensuu	1,675.46	71126	446	52	120	43.33	47199	5957	21,236.29	2.01	35,062.76	2201	82.46	25784	27104	6159	7897	17594
Lappeenranta	1,402.58	66189	812	111	214	43.33	41403	5053	22,444.81	2.09	38,150.37	2932	89.29	24118	25803	5105	5551	18109
Vaasa	340.22	65928	379	49	104	40.08	41923	6518	24,654.46	2.18	42,306.08	1907	86.68	31974	28443	3877	6670	14756
Hämeenlinna	1,868.45	65860	448	55	111	43.48	40711	5085	22,982.48	2.04	38,302.33	6667	84.95	24119	26731	4147	4534	18866
Seinäjoki	1,356.67	61880	594	42	207	41.45	39115	3962	22,962.36	2.25	40,439.00	802	95.00	27728	26687	3537	4840	13816
Rovaniemi	4,119.55	59330	405	28	123	40.96	38620	4886	22,647.87	2.19	39,279.43	2397	87.78	19920	24829	4213	5634	13180
Mikkeli	2,733.29	52750	448	49	72	45.39	33379	3500	22,372.33	2.08	38,449.70	8957	94.55	21167	21137	3423	4169	15349
Kotka	213.01	52115	309	13	45	43.81	31936	2606	22,477.05	2.05	37,905.95	1577	81.27	19768	18398	5060	3970	16071
Salou	1,834.74	50788	513	73	119	46.00	28775	2458	22,587.03	2.08	38,769.94	5919	96.64	16781	19210	4139	3246	15310

The numbers - Top 20 cities in Finland

City	Venues Total	Cafes Total	Restaurants Total	Most Common Venue #1	Most Common Venue #2	Most Common Venue #3	Most Common Venue #4	Most Common Venue #5	Most Common Venue #6	Most Common Venue #7	Most Common Venue #8	Most Common Venue #9	Most Common Venue #10
Helsinki	5347	838	1417	Café	Bar	Bus Stop	Pizza Place	Coffee Shop	Restaurant	Grocery Store	Scandinavian Restaurant	Park	Cafeteria
Espoo	2078	246	526	Bus Stop	Café	Pizza Place	Grocery Store	Coffee Shop	Cafeteria	Sandwich Place	Supermarket	Fast Food Restaurant	Pub
Tampere	1750	266	421	Café	Bus Stop	Bar	Pizza Place	Pub	Restaurant	Grocery Store	Fast Food Restaurant	Gastropub	Park
Vantaa	1359	129	272	Bus Stop	Grocery Store	Pizza Place	Café	Cafeteria	Supermarket	Furniture / Home Store	Train Station	Bar	Restaurant
Oulu	1073	103	305	Café	Grocery Store	Pizza Place	Fast Food Restaurant	Bar	Supermarket	Restaurant	Soccer Field	Gym / Fitness Center	Chinese Restaurant
Turku	1395	238	375	Café	Bar	Restaurant	Pizza Place	Grocery Store	Fast Food Restaurant	Pub	Gym / Fitness Center	Scandinavian Restaurant	Gym
Jyväskylä	831	116	211	Café	Pizza Place	Grocery Store	Pub	Scandinavian Restaurant	Supermarket	Bar	Gym	Coffee Shop	Restaurant
Kuopio	778	61	172	Grocery Store	Café	Pizza Place	Supermarket	Hotel	Bar	Diner	Scandinavian Restaurant	Fast Food Restaurant	Restaurant
Lahti	769	93	215	Café	Supermarket	Grocery Store	Bar	Pizza Place	Restaurant	Fast Food Restaurant	Clothing Store	Coffee Shop	Sandwich Place
Pori	465	29	104	Grocery Store	Supermarket	Café	Pizza Place	Fast Food Restaurant	Gym	Diner	Bar	Gas Station	Beach
Kouvola	580	52	126	Supermarket	Café	Grocery Store	Pizza Place	Fast Food Restaurant	Bar	Pub	Convenience Store	Bakery	Coffee Shop
Joensuu	446	52	120	Bar	Café	Supermarket	Pizza Place	Restaurant	Grocery Store	Pub	Scandinavian Restaurant	Coffee Shop	Nightclub
Lappeenranta	812	111	214	Café	Pizza Place	Bar	Supermarket	Hotel	Restaurant	Scandinavian Restaurant	Grocery Store	Bakery	Fast Food Restaurant
Vaasa	379	49	104	Café	Grocery Store	Pizza Place	Scandinavian Restaurant	Supermarket	Restaurant	Coffee Shop	Gym	Burger Joint	Hotel
Hämeenlinna	448	55	111	Café	Pizza Place	Supermarket	Park	Grocery Store	Restaurant	Bar	Campground	History Museum	Diner
Seinäjoki	594	42	207	Pizza Place	Bar	Fast Food Restaurant	Supermarket	Café	Restaurant	Hotel	Burger Joint	Mexican Restaurant	Grocery Store
Rovaniemi	405	28	123	Hotel	Scandinavian Restaurant	Grocery Store	Pizza Place	Café	Fast Food Restaurant	Bar	Gas Station	Restaurant	Supermarket
Mikkeli	448	49	72	Café	Grocery Store	Restaurant	Supermarket	Hotel	Pizza Place	Lake	Fast Food Restaurant	Pub	Harbor / Marina
Kotka	309	13	45	Pizza Place	Harbor / Marina	Supermarket	Grocery Store	Café	Furniture / Home Store	Park	Diner	Pub	Scandinavian Restaurant
Salo	513	73	119	Café	Grocery Store	Restaurant	Fast Food Restaurant	Bar	Diner	Supermarket	Kebab Restaurant	Chinese Restaurant	Gym / Fitness Center

The numbers - Top 20 cities in Finland



City	PC-Cluster - 1	PC-Cluster - 2	PC-Cluster - 3	PC-Cluster - 4	PC-Cluster - 5	PC Count
Helsinki	12.05	36.14	21.69	14.46	15.66	83
Espoo	11.11	51.11	24.44	13.33	0.00	45
Tampere	23.53	32.35	17.65	8.82	17.65	34
Vantaa	14.29	54.29	20.00	11.43	0.00	35
Oulu	33.33	46.15	7.69	12.82	0.00	39
Turku	19.23	30.77	26.92	23.08	0.00	26
Jyväskylä	37.50	43.75	9.38	9.38	0.00	32
Kuopio	74.00	20.00	4.00	2.00	0.00	50
Lahti	34.48	55.17	3.45	6.90	0.00	29
Pori	60.00	33.33	3.33	3.33	0.00	30
Kouvola	67.57	27.03	2.70	2.70	0.00	37
Joensuu	57.14	23.81	4.76	14.29	0.00	21
Lappeenranta	74.07	3.70	7.41	14.81	0.00	27
Vaasa	23.08	61.54	7.69	7.69	0.00	13
Hämeenlinna	71.43	19.05	9.52	0.00	0.00	21
Seinäjoki	63.64	9.09	9.09	18.18	0.00	22
Rovaniemi	69.57	13.04	4.35	13.04	0.00	23
Mikkeli	84.85	9.09	3.03	3.03	0.00	33
Kotka	71.43	23.81	4.76	0.00	0.00	21
Salo	80.65	9.68	0.00	9.68	0.00	31

Connection back to the Postal Code Area clusters!

Only Helsinki and Tampere have cluster 5 areas!

The smaller the city, the more cluster 1 covers it.

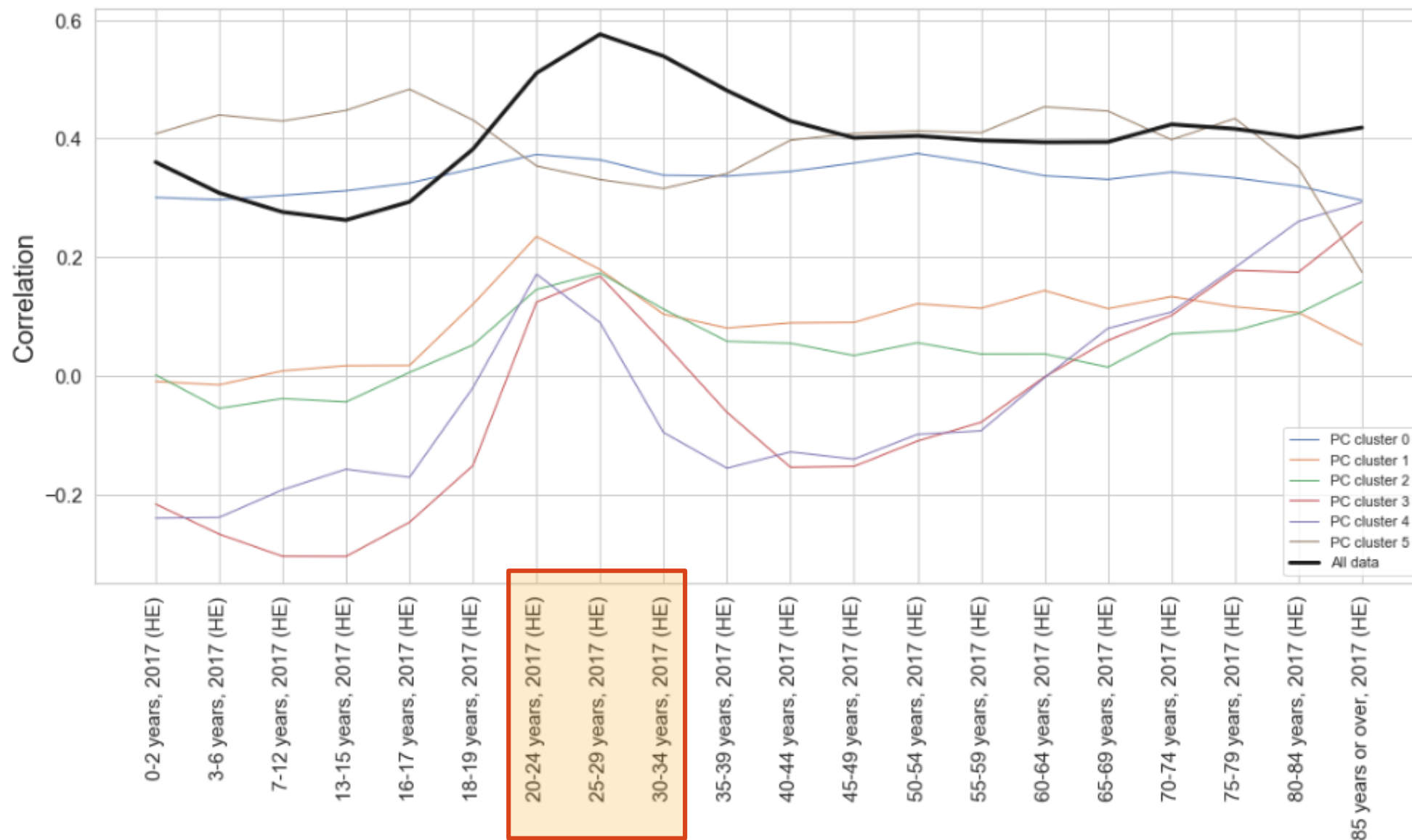


Connections
between
amount of cafes
and other facts

(=CORRELATIONS!)

+1.0 and -1.0 tell about a strong connection, zero tells no connection can be identified

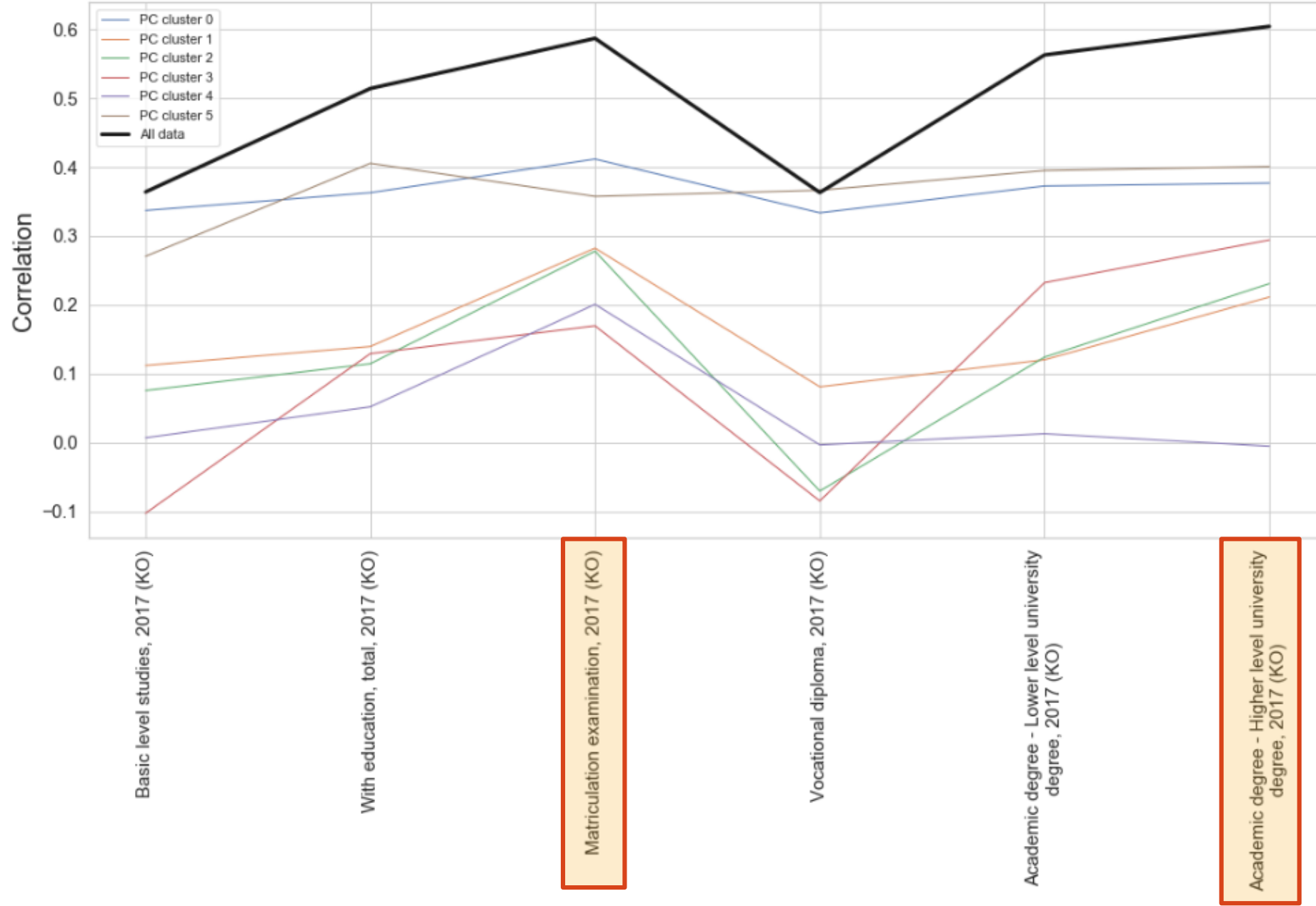
Cafés and age



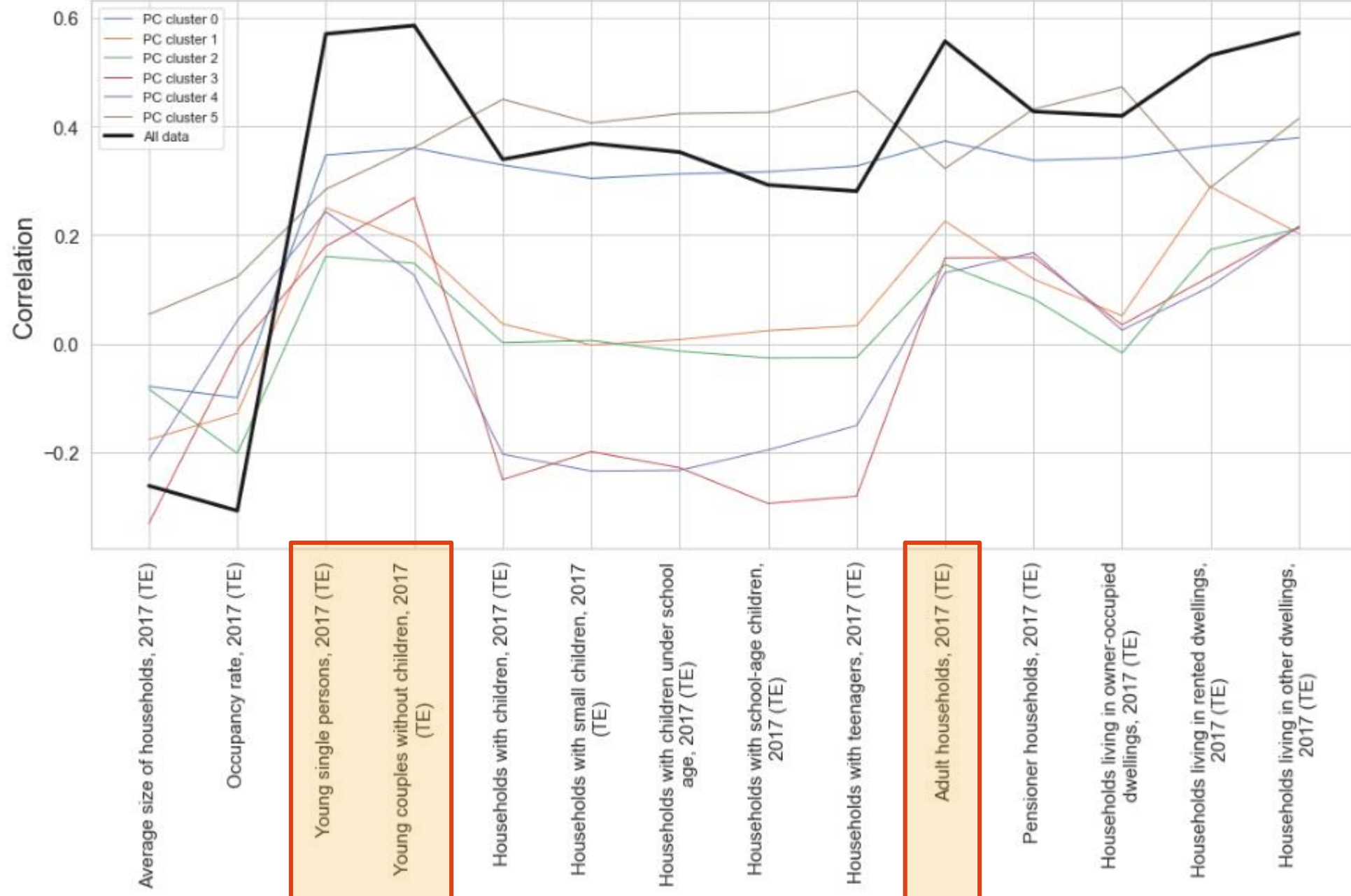
The black line tells the correlation over all postal code areas, we want to identify the high points of the black line.

Other color lines are based on smaller subsets of data (the clusters that were analyzed before), and they do not provide typically as strong correlation as the black line

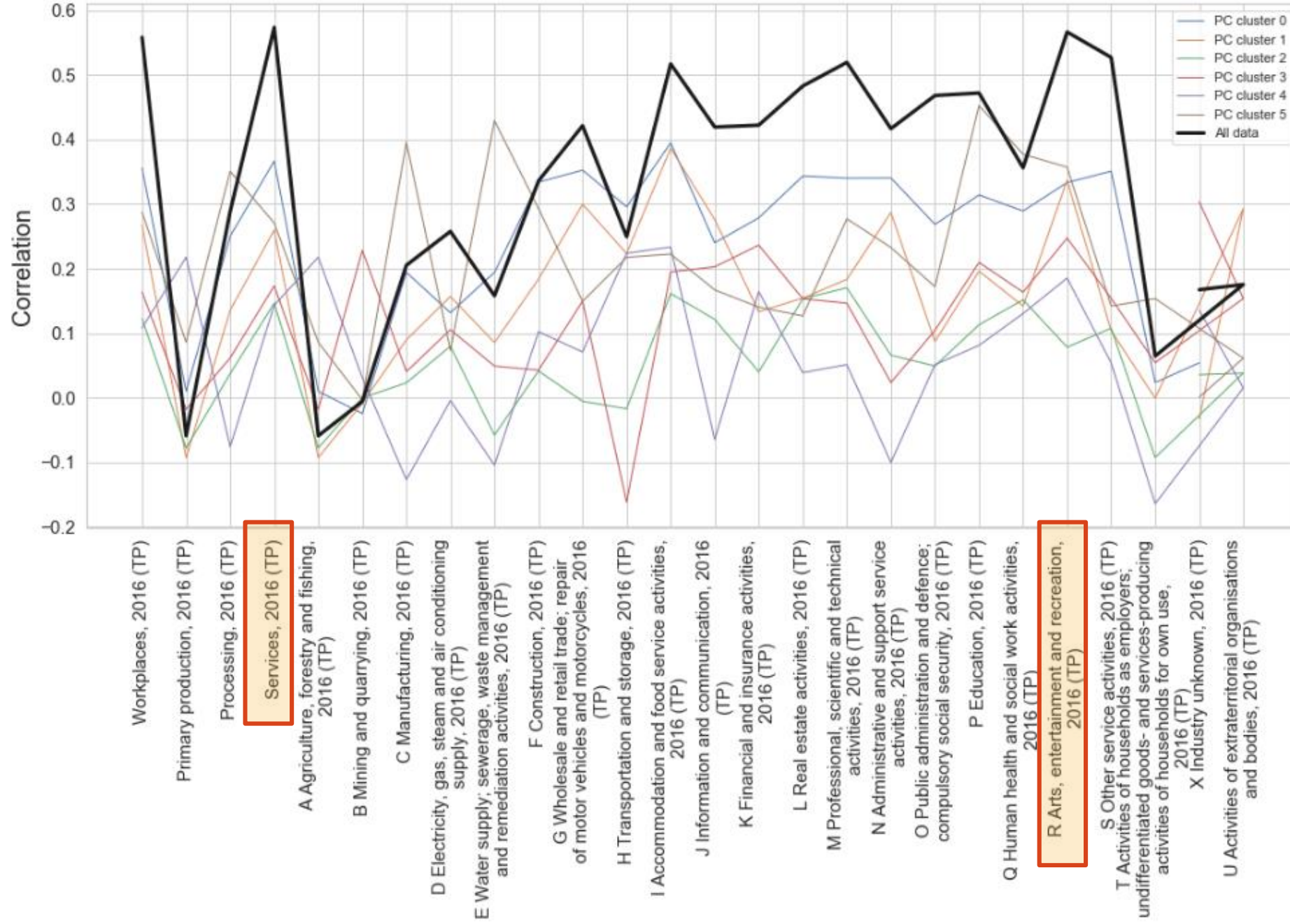
Cafés and education



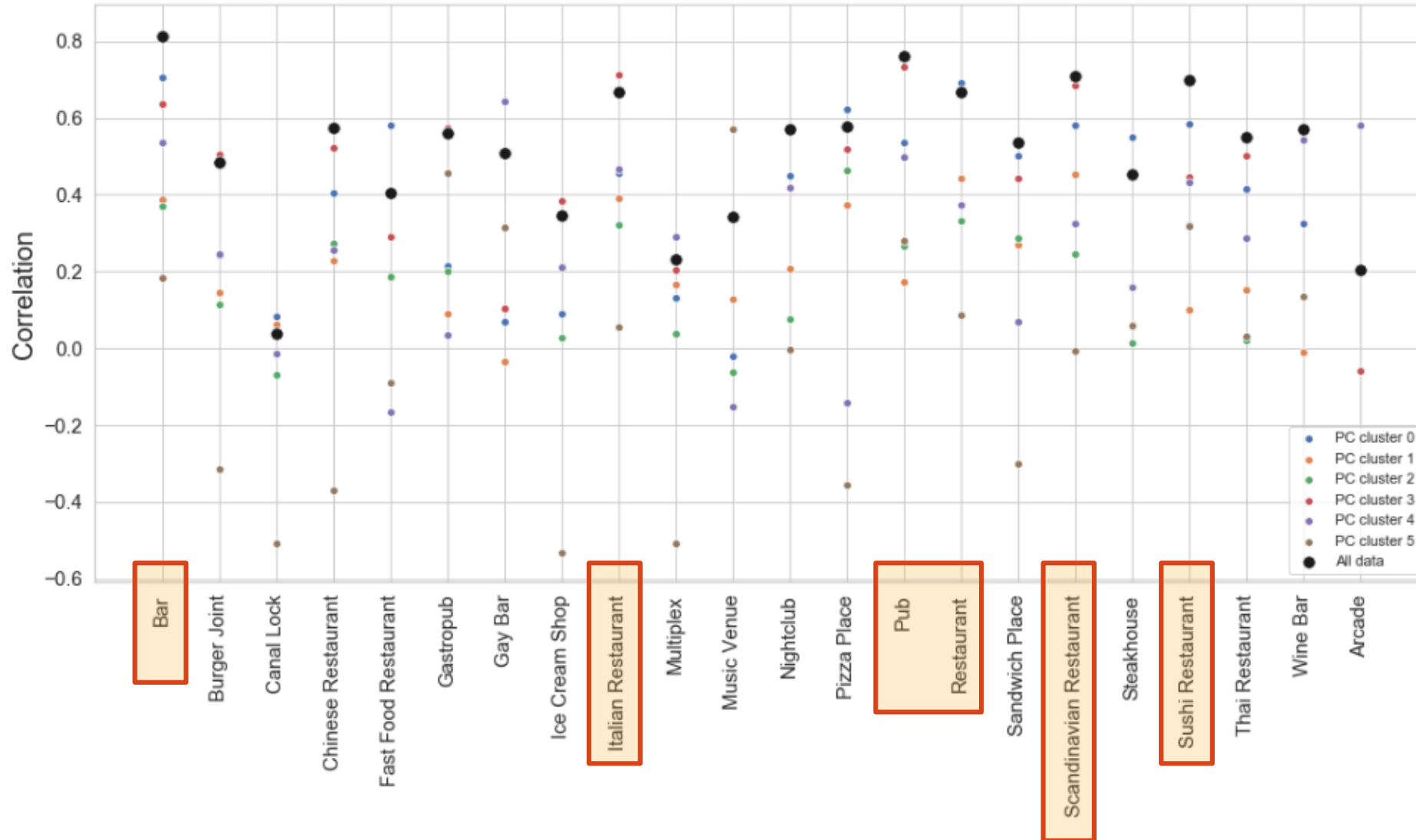
Cafés and households



Cafés and jobs



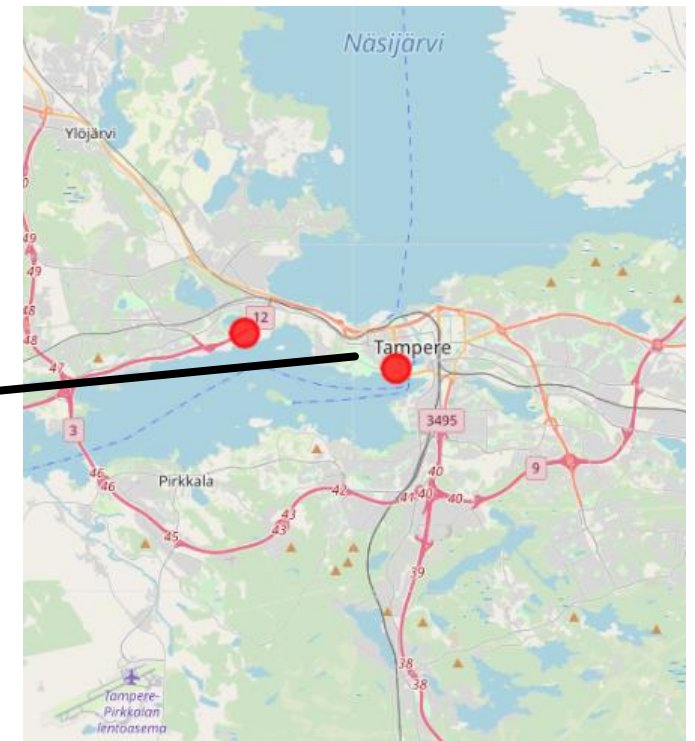
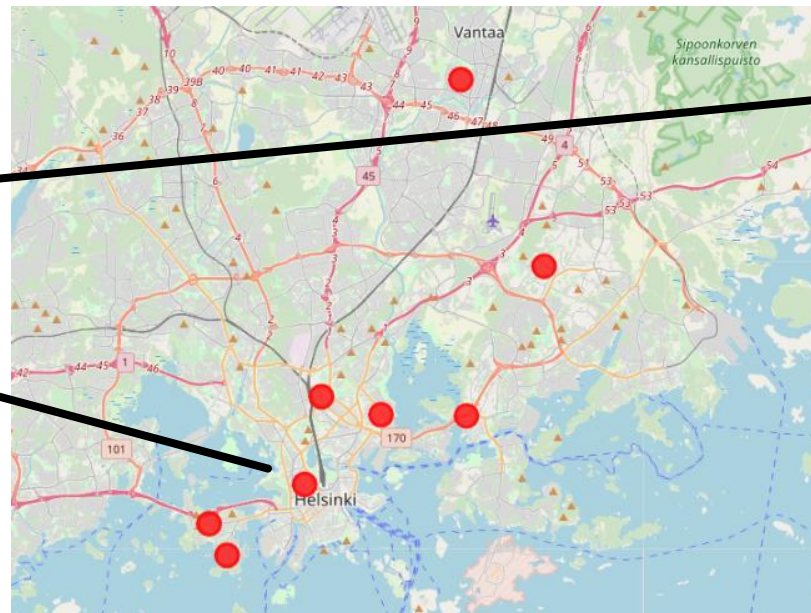
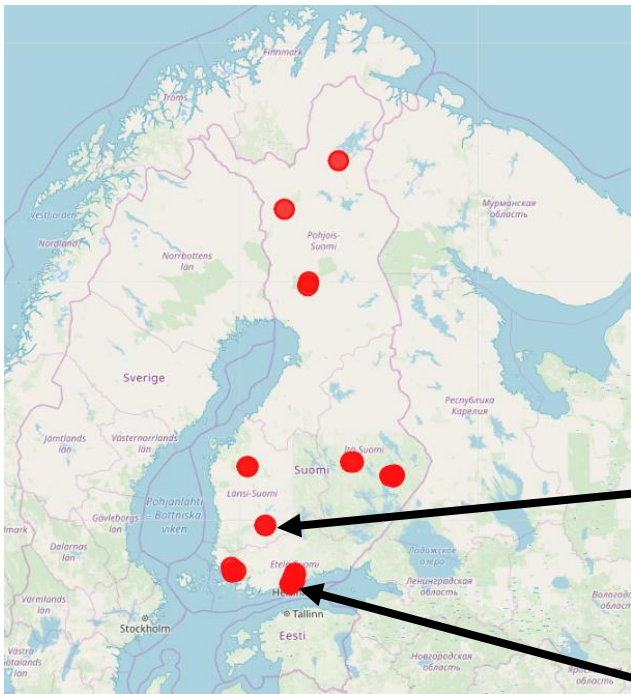
How well other venue types correlate to café amounts?



Most potential
new café
locations?

	PC	PC Name	City	Cafes Total	Predicted Cafes Total	Cafe Potential
10	00210	Vattuniemi	Helsinki	8	20	12
0	00100	Helsinki Keskusta - Etu-Töölö	Helsinki	36	47	11
77	00940	Kontula - Vesala	Helsinki	7	17	10
9	00200	Lauttasaari	Helsinki	11	21	10
810	33200	Tampere Keskus Läntinen	Tampere	24	33	9
1339	60510	Hylykallio	Seinäjoki	5	13	8
1333	60120	Pohja	Seinäjoki	6	14	8
1755	80220	Penttilä	Joensuu	16	24	8
1749	80110	Joensuu Keskus Eteläinen	Joensuu	13	21	8
1748	80100	Joensuu Keskus, Pohjoinen	Joensuu	16	24	8
2074	99130	Sirkka-Rauhala	Kittilä	11	18	7
64	00810	Herttoniemi	Helsinki	6	13	7
519	20540	Nummi-Ylioppilaskylä	Turku	1	8	7
506	20100	Turku Keskus	Turku	2	9	7
214	04200	Kerava Keskus	Kerava	1	8	7
2086	99800	Ivalo	Inari	7	14	7
547	21250	Masku	Masku	4	10	6
35	00520	Itä-Pasila	Helsinki	1	7	6
815	33270	Epilä	Tampere	7	13	6
41	00580	Verkkosaari	Helsinki	17	23	6
1611	70500	Männistö	Kuopio	1	7	6
1623	71130	Kortejoki	Kuopio	2	8	6
218	04250	Alikerava	Kerava	1	7	6
1759	80400	Ylämylly	Liperi	17	23	6
2034	96200	Sahanperä-Ratantaus	Rovaniemi	6	12	6
2036	96400	Pullinranta-Kiiruna	Rovaniemi	7	13	6
91	01300	Tikkurila	Vantaa	1	7	6

Most potential new café locations?





Thank you!