



Wage Pressure Cluster Analysis

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4/1X/1X



Objective

- Do cluster analysis for the 1X5X stores
- Identify the stores that have the highest pressure to increase wages

How To Measure The Similarity Of Stores?



VS





Quantifying The Store Similarity

- ChangeMeasure
 - How do they change over the year?
- DifferenceMeasure
 - How do they compare with all other stores?



How Do They Change Over The Year?

- Calculate change from 4/X/1X, 7/2X/1X, 10/XX/1X, to 1/XX/1X
- 9, constantly worse
- -9, constantly improve
- Possible values [-9, -8, -7, -6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9]



How Do They Compare With All Other Stores?

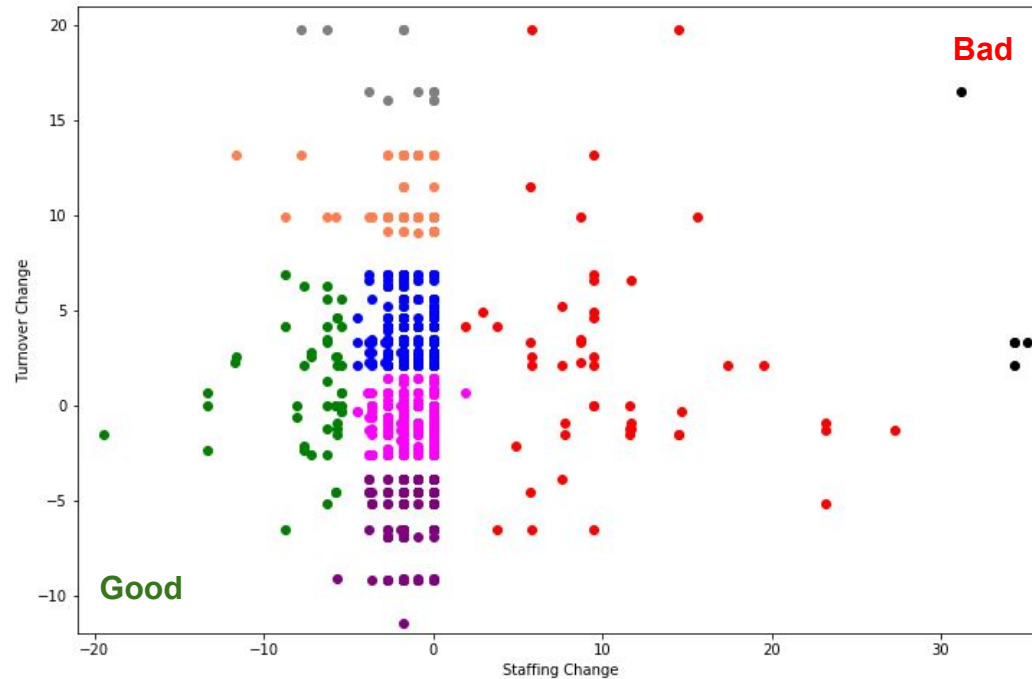
- Calculate the average score for all stores at 1/XX/1X
- Calculate the difference between a store and all store average at
1/XX/1X



Utilizing Two Important Features

- Current Staffing Score
- Turnover Score

Store Clusters On Staffing And Turnover



Stores Having Staffing Worsen Constantly

Location	LocationName
980	
1127	
1197	
1276	
1349	

			District	Region			Current Starting	Current Staffing		YTD Average	Current Staffing	YTD Staffing	Total Staffing		YOY Turn		
Location	Location Name		Number	Number	Terr Nur	EFF DT	Rate	Staffing Lev	Level	Staffing Level	Score	Score	Score	LY Turn	YTD Turn %	Variance	
1349			23	14	1		\$9.00	89%	89%	93.7%	4	3	3	3.3	51.6%	75.4%	23.85%
1349			23	14	1		\$9.00	94%	94%	94.6%	3	3	3	3	39.7%	66.7%	26.96%
1349			23	14	1		\$9.00	95%	95%	94.8%	2	3		2.7	25.2%	37.0%	11.84%
1349			23	14	1		\$9.00	100%	100%	94.9%	1	3		2.4	1.5%	9.5%	8.04%

			Unemployment	Kohl's to County	County	Applicant	Acceptance	Acceptance	Applicant	Recruiting	Cost of Labor	Wage Pressue	Starting Rate		
Location	Location Name		Score	Comp Score	Score	Flow	Rate	Rate Score	Flow Score	Score	Zone	Score	Wage Score Col	Buckets	
1349				4	3	3.5	5.63	0.94	2	3	2.4	2	3.54	Yellow	\$9.00
1349				4	3	3.5	6.01	1.05	1	3	1.8	2	3.3	Yellow	\$9.00
1349				3	3	3	8.73	0.96	1	2	1.4	2	3.01	Yellow	\$9.00
1349				3	3	3	37.00	1.00	1	1	1	2	2.57	Green	\$9.00

Location	LocationName
48	
109	
180	
238	
579	
967	

Stores Having Turnover Worsen Constantly

Location	Location Name	District Number	Region Number	Terr Nur	EFF DT	Current Starting Rate	Current Staffing Level	YTD Average Staffing Level	Current Staffing Score	YTD Staffing Score	Total Staffing Score	LY Turn	YTD Turn %	YOY Turn Variance
109		3	6	2		\$9.00	100%	100%	99.4%	1	2	1.7	45.0%	60.7% 15.73%
109		3	6	2		\$9.00	100%	100%	99.7%	1	2	1.7	43.9%	48.1% 4.17%
109		3	6	2		\$9.00	100%	100%	99.6%	1	2	1.7	23.4%	23.0% -0.42%
109		3	6	2		\$9.00	100%	100%	99.5%	1	2	1.7	5.6%	5.2% -0.36%

Location	Location Name	Turnover Score	Unemployment Score	Kohl's to County Comp Score	County Score	Applicant Flow	Acceptance Rate	Acceptance Rate Score	Applicant Flow Score	Recruiting Score	Cost of Labor Zone	Wage Pressue Score	Wage Score Col
109			5	5	2	3.5	2.95	0.87	3	1	2.2	2	3.01 Yellow
109			4	5	2	3.5	2.55	1.19	1	1	1	2	2.46 Green
109			3	4	2	3	1.98	0.85	3	1	2.2	2	2.41 Green
109			3	3	2	2.5	3.31	0.78	5	2	3.8	2	2.71 Green

Stores Having Staffing Improving Constantly

Location	Location Name	District Number	Region Number	Terr Nur	EFF DT	Current Starting Rate	Current Staffing Staffing Lev	YTD Average Staffing Level	Current Staffing Score	YTD Staffing Score	Total Staffing Score	LY Turn	YTD Turn %	YOY Turn Variance
711		57	3	4		\$12.25	86%	86%	63.3%	4	5	4.7	109.4%	-18.52%
711		57	3	4		\$12.25	66%	66%	62.9%	5	5	5	77.0%	15.51%
711		57	3	4		\$11.75	70%	70%	62.4%	5	5	5	43.3%	12.48%
711		57	3	4		\$11.25	65%	65%	61.0%	5	5	5	9.6%	10.71%

Location	Location Name	Turnover Score	Unemployment Score	Kohl's to County Comp Score	County Score	Applicant Flow	Acceptance Rate	Acceptance Rate Score	Applicant Flow Score	Recruiting Score	Cost of Labor Zone	Wage Pressue Score	Wage Score Col	Starting Rate Buckets
711		2	5	3	4	3.09	0.89	3	2	2.6	2	3.36	Yellow	Over \$10.50
711		5	5	3	4	3.76	1.12	1	2	1.4	2	3.9	Orange	Over \$10.50
711		5	5	3	4	3.79	0.87	3	2	2.6	2	4.2	Red	Over \$10.50
711		5	5	3	4	3.05	0.93	2	2	2	2	4.05	Red	Over \$10.50



Store Clustering Using All Features

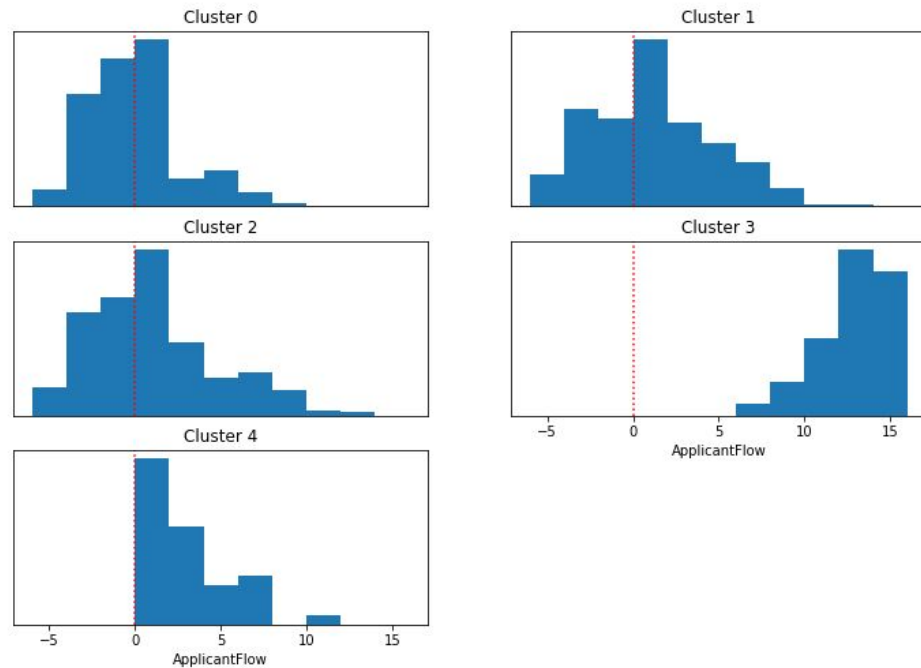
- Features Used: 'CurrentStaffingScore', 'TurnoverScore', 'RecruitingScore', 'UnemploymentScore', 'KohlstoCountyCompScore', 'CountyScore', 'AcceptanceRateScore', 'ApplicantFlowScore'
- Measure the change and difference of these features
- Use Hierarchy clustering to cluster the stores into 5 clusters



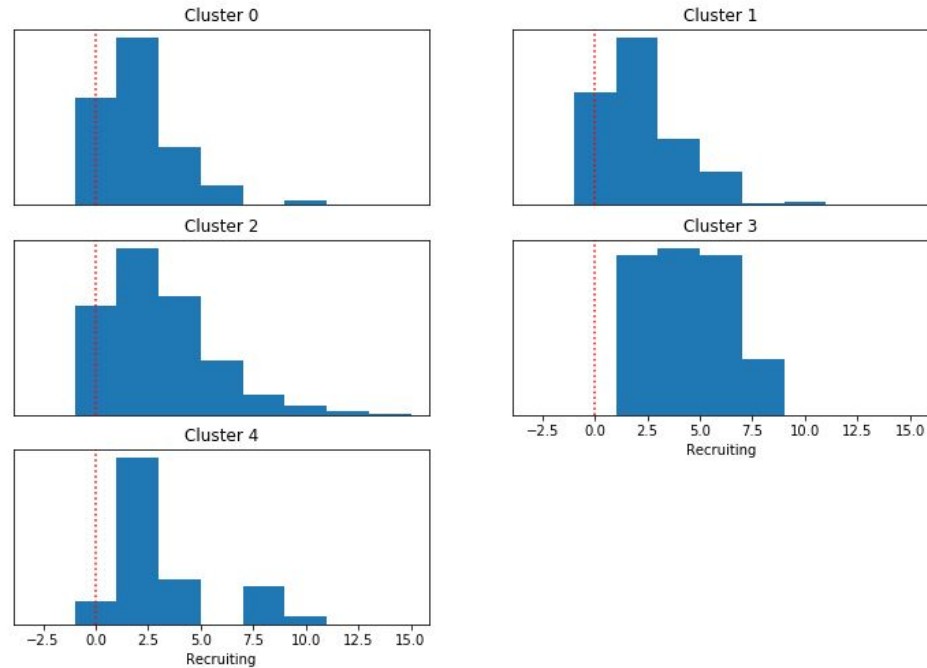
Insights From Clustering

Cluster	Count	AcceptanceRate	ApplicantFlow	County	CurrentStaffing	KohlstoCountyComp	Recruiting	Turnover	Unemployment
Measure < -1, Large is Good.									
0	192	3%	40%	34%	63%	11%	2%	29%	31%
1	301	6%	29%	4%	58%	1%	6%	57%	6%
2	451	2%	34%	42%	59%	10%	2%	71%	42%
3	69	0%	0%	15%	56%	3%	0%	60%	21%
4	38	5%	30%	16%	0%	3%	5%	46%	14%
Measure > 1, Large is Bad.									
0	192	60%	14%	19%	1%	34%	59%	60%	12%
1	301	55%	34%	94%	1%	83%	57%	18%	39%
2	451	68%	28%	11%	0%	27%	68%	3%	6%
3	69	72%	100%	57%	12%	65%	76%	16%	29%
4	38	65%	38%	70%	97%	70%	65%	30%	30%

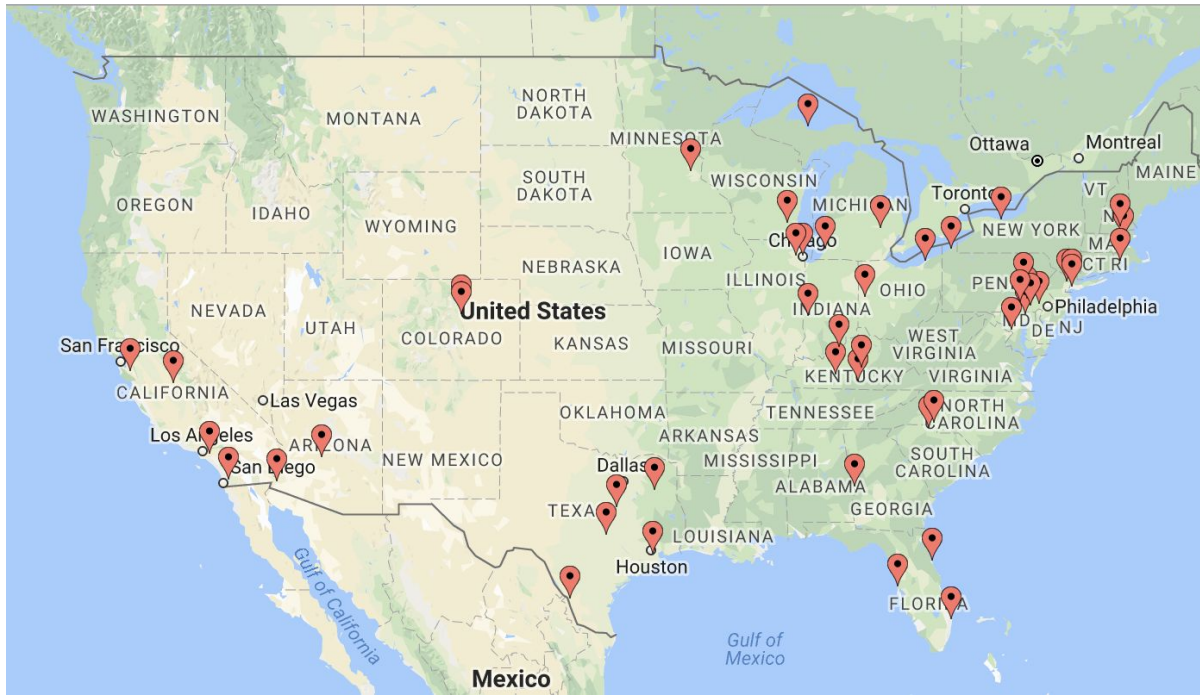
ApplicantFlow Measure In Clusters



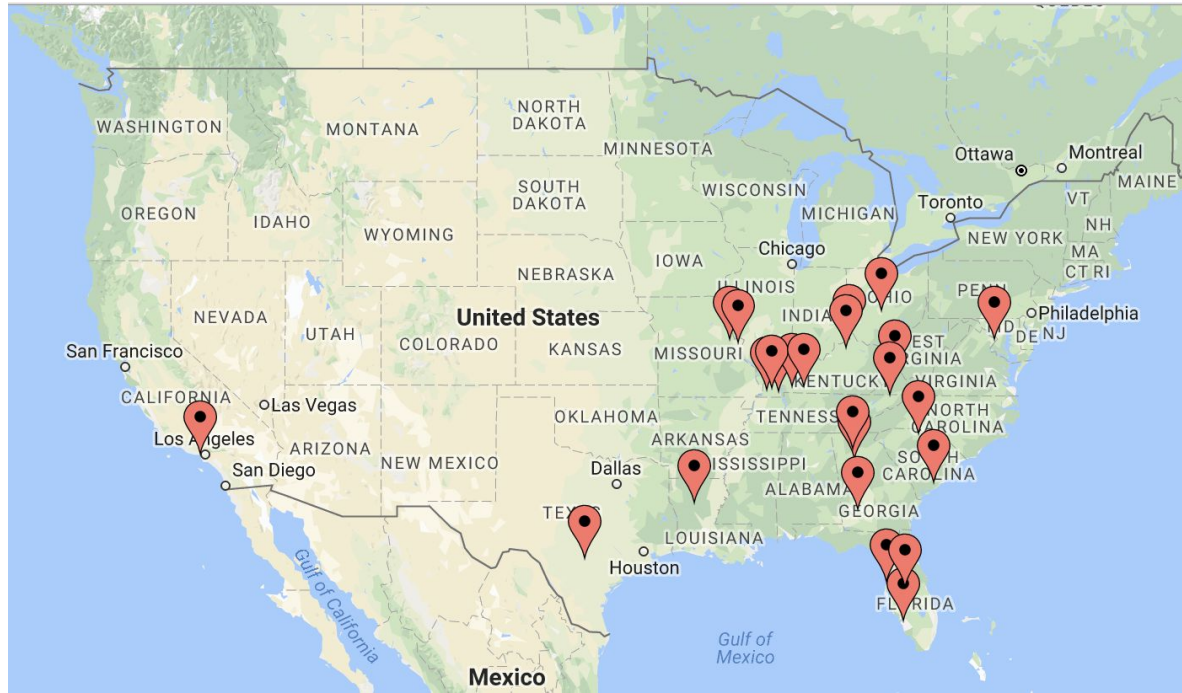
Recruiting Measure In Clusters



Stores Have Bad Recruiting And Bad Application



Stores Have Bad Staffing



**Stores In Cluster 3 and 4 Are The Ones Need
To Look Into To Increase Wage**