

Checkpoint 1 - Relational Analytics

Question 1 - What is the distribution of the CSS metric for all officers active during the last 50 years (count, min, max, mean, median, 25th and 75th percentile)?

Answer 1 - The distribution of CSS is shown in the table below. The table shows us that this metric is skewed to the right which is not surprising as there are a few police officers against whom multiple complaints must have been filed by civilians. These officers fall on the higher side of the CSS.

min	max	min	count	median	pct_25	pct_75	stdev
0	16.9394	1.3872	20352	0.93815	0.4211	1.85	1.4355

Question 2- What does the distribution of data_reward, data_officer (major_reward_count, honorable_mention_count) look like? Which ones are the most common? What Percentage does this make up when compared to all the police officers?

Answer 2 - There are 45 different types of awards offered to Chicago Police officers. Their distribution is calculated using the Query. Honorable mention is the most common award type. We observed the number of Honorable Mentions for each police officer. Going forward, we would like to find out the CSS for the officers with more honorable mentions. Ideally this should be low.

Question 3- What is the mean ,median, standard deviation, min and max salary hike offered to police officers in a year?

Answer 3 - We calculate the statistical distribution of salary hike offered to individual police officers. It is interesting to observe that some officers do not receive a hike every year. The average hike offered to some officers is less than others. With further analysis, we would investigate the reason for this.

Question 4 - How do the rewards change for the police officers under different brackets of CSS? Brackets will be determined based on the percentile of the CSS.

The table provided below shows the change of rewards for police officers under different CSS brackets. These brackets were determined based on the CSS percentiles (0-10, 10-20, etc.). The overall column is the row wise sum of all percentiles. This table is interesting as it shows a breakdown of the different types of awards against the sum of all officers who received these awards in the last 50 years based on the CSS percentile bracket. **The highlighted rows show us an increasing trend**

where officers who have a higher CSS score tend to receive more awards than those who score lower. The outside governmental agency award is the only row which is highlighted in green that shows us a linear decrease as CSS scores increase.

#	award_type	overall	pct_10	pct_10_20	pct_20_30	pct_30_40	pct_40_50	pct_50_60	pct_60_70	pct_70_80	pct_80_90	pct_90_100
1	2009 Crime Reduction Award	13060	1068	1315	1461	1465	1385	1403	1367	1338	1249	1163
2	Annual Bureau Award Of Recognition	169	10	12	19	12	21	10	17	21	19	32
3	Arnold Mireles Special Partner	619	20	30	18	32	51	55	68	92	122	134
4	Attendance Recognition Award	25598	1726	2343	2513	2698	2657	2677	2703	2887	2814	2891
5	Award Of Appreciation	25	1	0	2	2	4	2	5	4	3	3
6	Carter Harrison	3	0	0	0	1	0	1	0	0	1	0
7	Chicago Police Leadership Award	45	2	2	1	5	6	4	4	6	5	11
8	Civilian Service Recognition Award	1	1	0	0	0	0	0	0	0	0	0
9	Complimentary Letter	56578	5921	6078	6198	6267	5850	5701	5550	5519	5180	4963
10	Department Commendation	41509	2377	2874	3118	3597	3828	4152	4604	5252	5757	6440
11	Deployment Operations Center Award	3229	35	70	99	191	220	253	328	457	608	1011
12	Emblem Of Recognition - Appearance	139	7	19	19	17	25	9	20	15	6	5
13	Emblem Of Recognition - Physical Fitness	23620	1520	2330	2514	2528	2697	2534	2397	2564	2519	2317
14	Honorable Mention	377510	16352	24458	27894	31331	35175	37203	42873	47391	54765	64884
15	Honorable Mention Ribbon Award	1602	30	50	74	93	145	151	206	252	287	332
16	Honor Guard Award	7	0	1	0	0	2	0	3	1	0	0
17	Hundred Club Of Cook County Medal Of Valor	10	0	4	4	0	0	1	0	1	0	0
18	Joint Operations Award	4415	166	199	266	288	374	430	534	661	706	836
19	Lambert Tree	6	0	1	0	0	0	1	1	2	1	0
20	Life Saving Award	4609	425	490	451	476	455	450	498	487	470	448
21	Military Deployment Award	494	60	47	49	52	51	50	64	39	46	39
22	Military Service Award	1300	156	175	139	128	152	113	133	113	98	98

23	Nato Summit Service Award	11770	771	1088	1257	1324	1297	1305	1289	1276	1195	1110
24	Other Awards	6	1	0	1	0	1	1	0	1	0	1
25	Outside Governmental Agency Award	747	150	91	88	86	63	72	55	56	50	42
26	Pipe Band Award	38	3	3	5	3	3	4	3	6	4	4
27	Police Blue Shield Award	406	61	29	52	45	49	41	47	33	28	25
28	Police Blue Star Award	101	2	5	3	6	4	11	14	13	14	29
29	Police Medal	13	0	1	0	0	1	0	2	1	4	4
30	Police Officer Of The Month Award	1861	24	55	65	81	123	113	225	296	374	518
31	Presidential Election Deployment Award 2008	12456	1009	1254	1399	1393	1311	1344	1308	1285	1200	1101
32	Problem Solving Award	3984	246	243	291	337	376	388	459	492	536	653
33	Recognition / Outside Governmental Agency Award	1128	52	72	80	78	97	99	106	141	180	235
34	Special Commendation	5191	275	318	335	402	469	476	538	666	790	980
35	Special Honorable Mention	12	0	0	0	1	0	2	3	1	2	3
36	Special Service Award	177	13	23	17	21	24	16	15	11	11	26
37	Superintendents Award Of Merit	617	63	60	51	47	67	42	64	66	73	85
38	Superintendent'S Award Of Tactical Excellence	579	67	69	61	58	55	54	47	50	60	65
39	Superintendents Award Of Valor	2316	264	204	186	182	210	197	231	244	261	352
40	Superintendent'S Honorable Mention	869	35	52	50	65	82	68	98	118	147	161
41	Thomas Wortham Iv Military And Community Service Award	8	0	0	0	0	1	1	2	1	0	3
42	Top Gun Arrest Award	306	2	10	9	20	15	9	28	51	58	105
43	Traffic Stop Of The Month Award	2180	122	155	140	168	199	214	245	279	306	376
44	Unit Meritorious Performance Award	8983	467	679	756	761	866	913	990	1054	1245	1356
45	William Powers Leadership Award	172	17	13	12	15	21	13	16	25	19	27