To leave or not to leave?

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Insight AI

Background:

Your team has been tasked with diagnosing why and when employees from your subsidiaries leave.

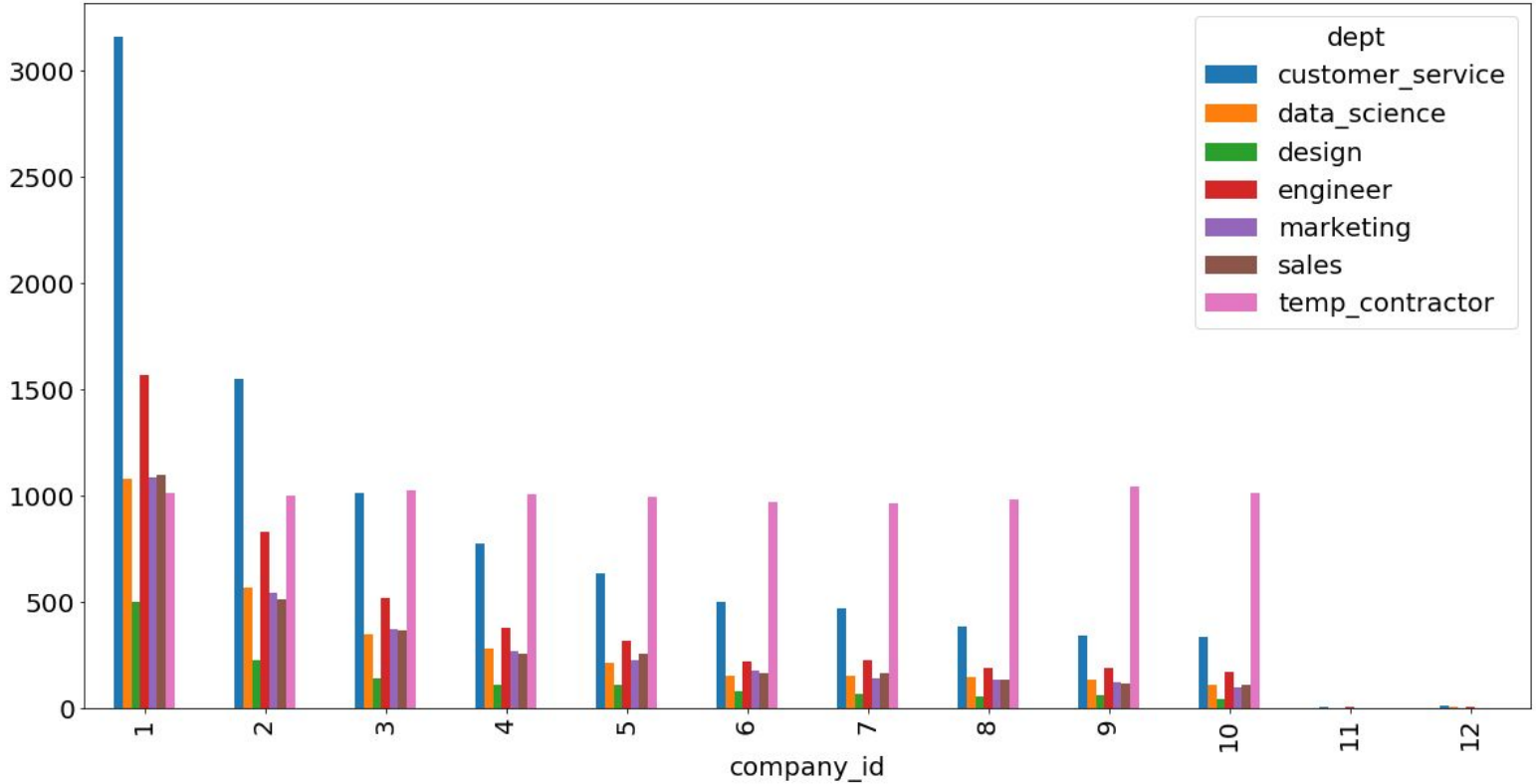
You need a tangible data-driven recommendation for each of the ten Presidents of your subsidiaries.

What are your recommendations and why?

	employee_id	company_id	dept	seniority	salary	join_date	quit_date
0	1001444.0	8	temp_contractor	0	5850.0	2008-01-26	2008-04-25
1	388804.0	8	design	21	191000.0	05.17.2011	2012-03-16
2	407990.0	3	design	9	90000.0	2012-03-26	2015-04-10

First look

company_id	employee_id	dept	seniority	salary	join_date	quit_date
1	9501	9501	9501	9423	9501	5636
2	5220	5220	5220	5178	5220	3204
3	3773	3773	3773	3748	3773	2555
4	3066	3066	3066	3046	3066	2157
5	2749	2749	2749	2734	2749	1977
6	2258	2258	2258	2243	2258	1679
7	2185	2185	2185	2170	2185	1653
8	2026	2026	2026	2011	2026	1558
9	2005	2005	2005	1998	2005	1573
10	1879	1879	1879	1873	1879	1494
11	16	16	16	16	16	12
12	24	24	24	23	24	12

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11 ['engineer' 'customer_service' 'marketing' 'data_science'] 4
12 ['data_science' 'engineer' 'customer_service' 'marketing' 'sales' 'design'] 6
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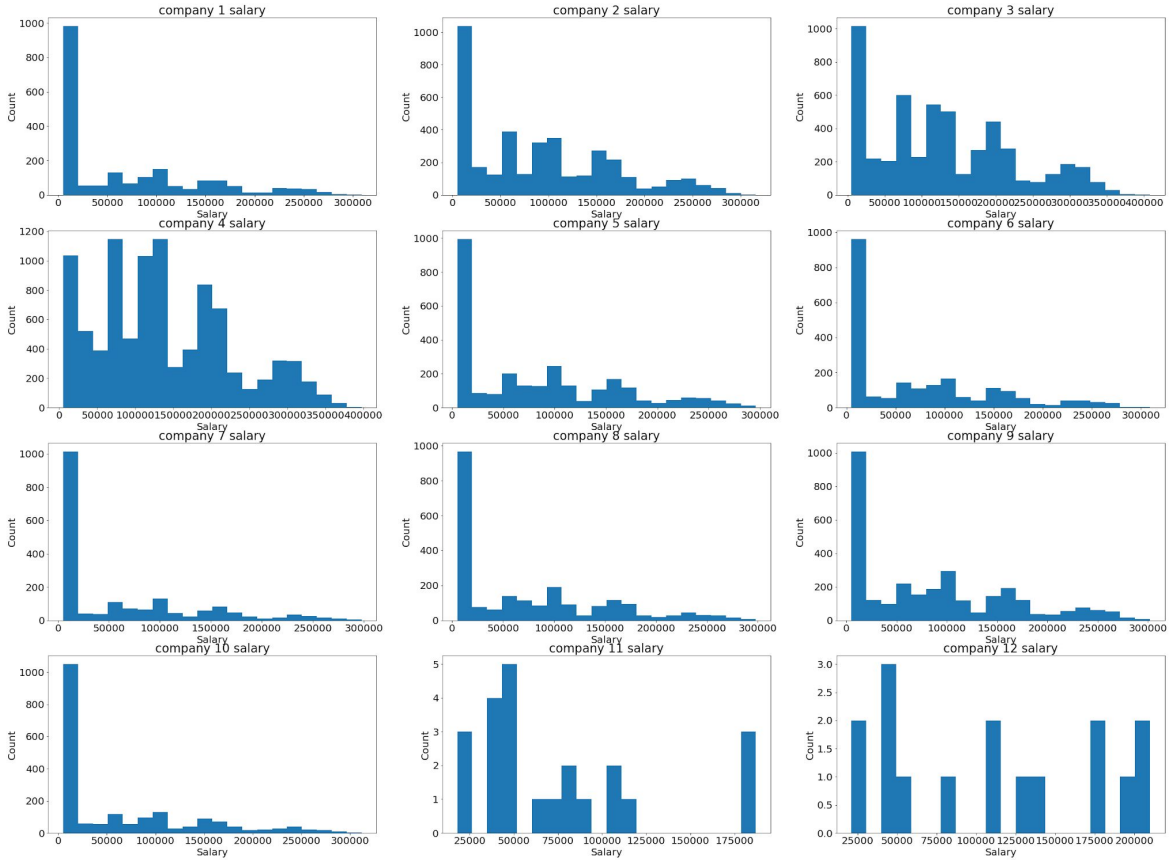
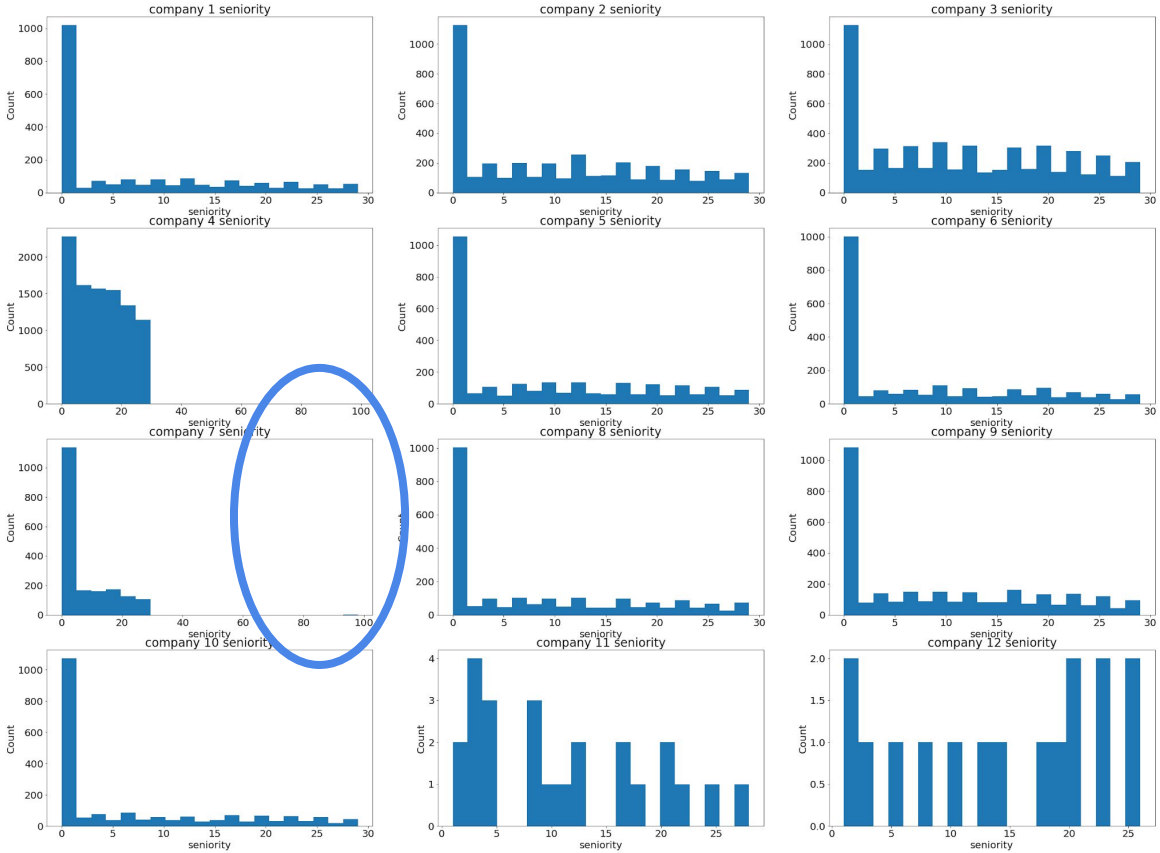
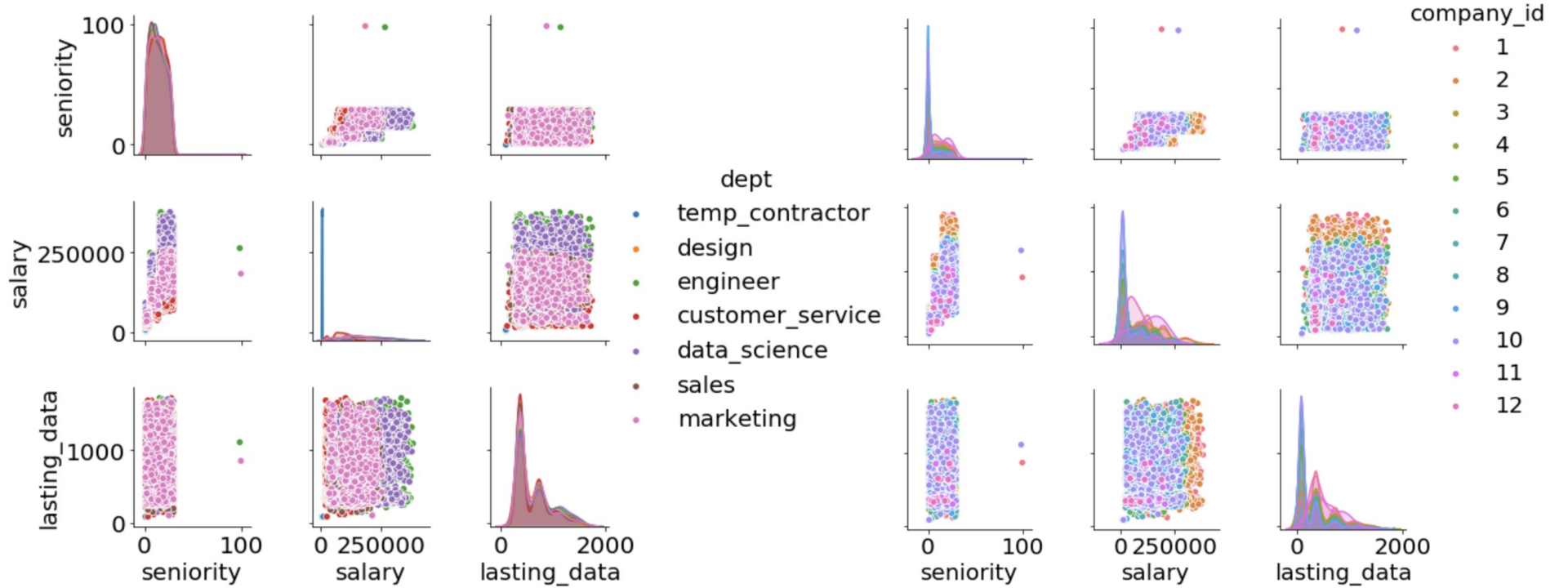


Salary distribution for each company



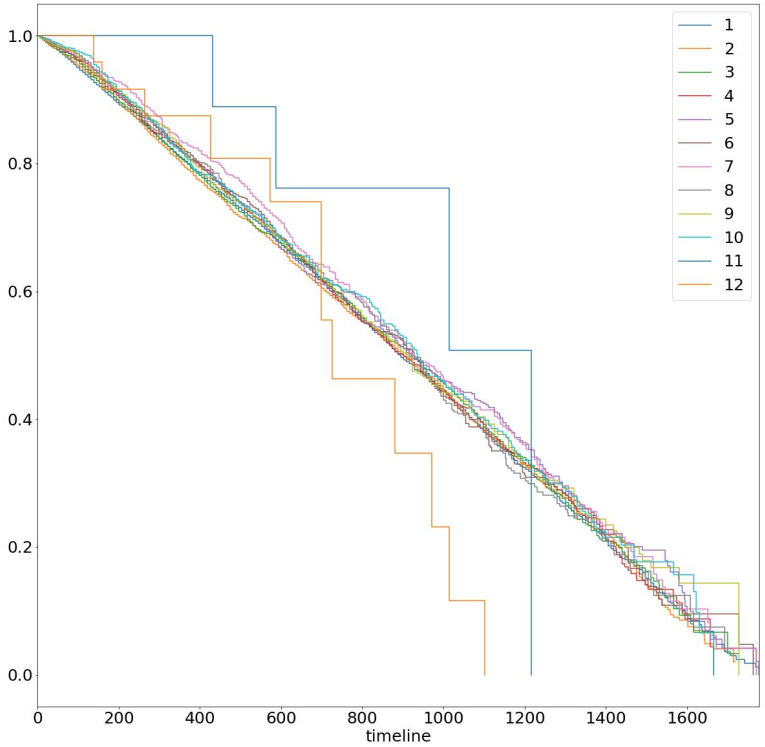
Seniority distribution for each company

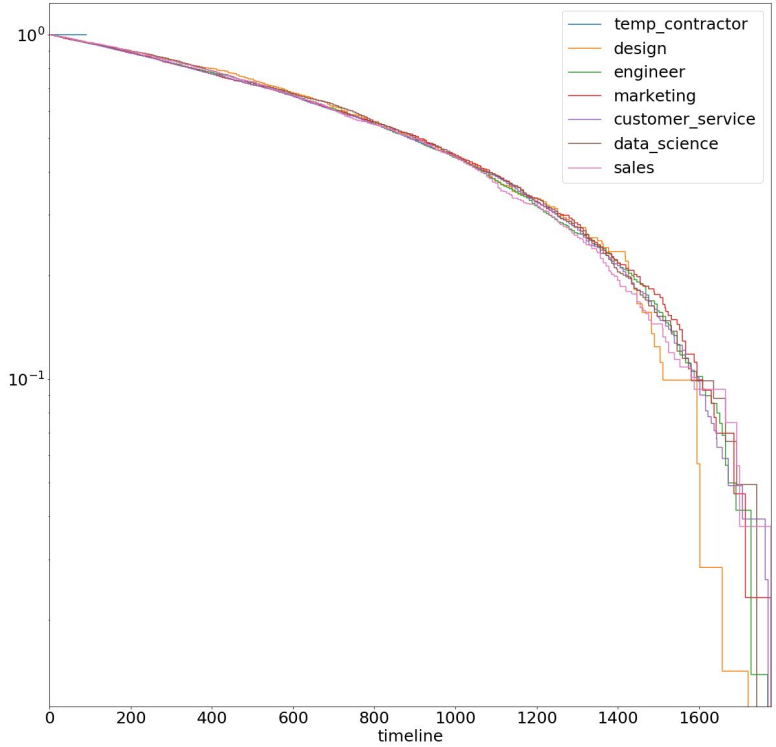
Pairwise correlation



Survivor analysis

1. Kaplan Meier Fitter





2. Cox PH Fitter

Customer service

	coef	exp(coef)	p
seniority	0.20	1.23	0.04
salary	-0.77	0.46	0.03

company 1
engineer:
salary -0.53 (p = 0.10)
sale:
seniority -0.69 (p=0.03)
salary 1.20 (0.06)

company 3
customer service:
seniority 1.65 (p = 0.10)
salary -2.37 (p = 0.02)
sale:
seniority 0.91(p = 0.09)

company 4
customer service:
seniority 0.7 (p = 0.05)

company 5
engi
seni)
sala)

Feature Collinearity

company 6
data_science
seniority -1.33 (p = 0.10)
sales
seniority -1.72 (p = 0.03)
salary 3.83(p = 0.05)

company 8
engineer
salary 2.37(p = 0.07)

company 9
engineer
seniority -1.25 (p = 0.10)

company 10
customer_service
seniority 0.97 (p = 0.10)
data_science
seniority -2.8 (p = 0.01)
salary 3.97(p = 0.01)
sales
salary -4.30(p = 0.09)

Recommendations

Raise salary for:

company 1 data_science

company 3 engineer

company 3 customer_service

company 3 sales

company 4 sales

company 8 marketing

company 10 engineer

company 10 sales