



Agenda

- **Problem Statement**
- **Approach**
 - **EDA**
 - **NLP**
 - **NLU (pros and cons)**
- **Summary and recommendations**



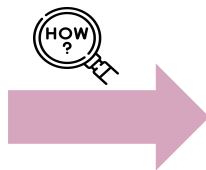
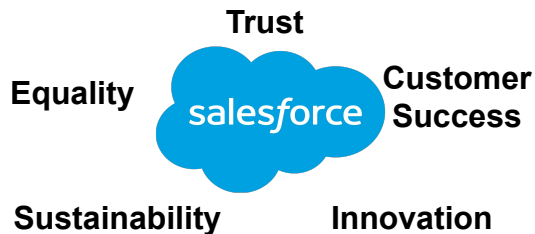
Problem Statement

Job satisfaction is determined by employee evaluation.

Globally, including Japan, Salesforce ranks among the top companies in employee reviews.

We want to explore what characteristics influence employee satisfaction.

I believe that Salesforce will continue to be a great place to work 10 years from now.



“Job satisfaction” visualization project

Create a data team within Salesforce

From social media, online reviews, etc. The team visualize and clarify the “truth” of what the company is doing well and not doing well.

What kind of impact is being made internally by what Salesforce is doing to grow as a better place to work?

Continue to understand by visualizing good and bad for employees.

As a result, Salesforce will continue to be a great place to work



Approach

Webscraping online data
(10249 rows)



Data Cleaning



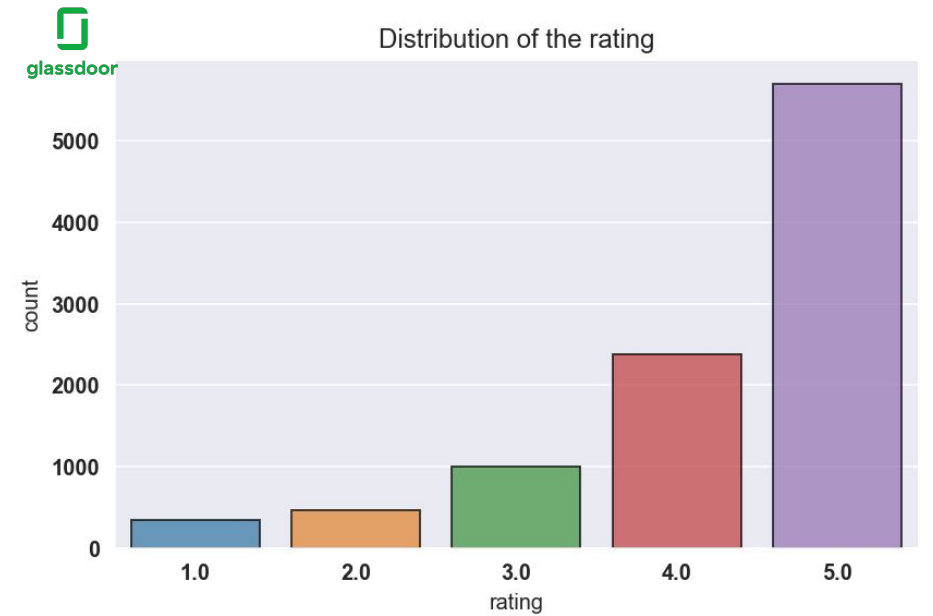
Analysis

- EDA
- NLP
- Emotional Analysis



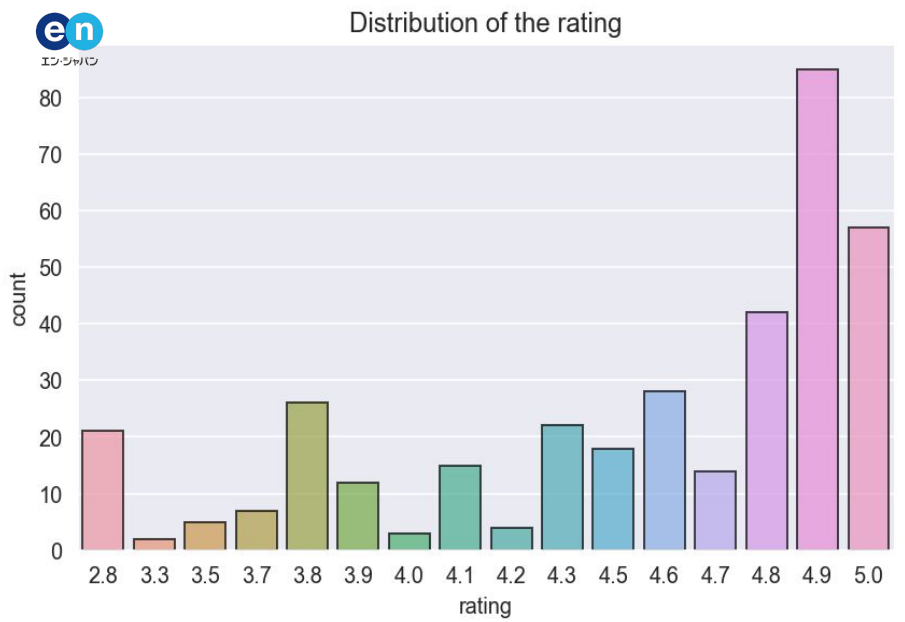
EDA

Is there a bias in employee evaluation between the world and Japan?



	Global	Japan
count	9888	361
mean	4.27807	4.481994
std	1.048668	0.593607
min	1	2.8
25%	4	4.1
50%	5	4.8
75%	5	4.9
max	5	5

(9888データ)



(361 データ)

→ There is no essential difference between the evaluation of global data and Japanese data



EDA

Are there biases in the evaluation of occupations?



eval_high

×

Job titles

eval_low

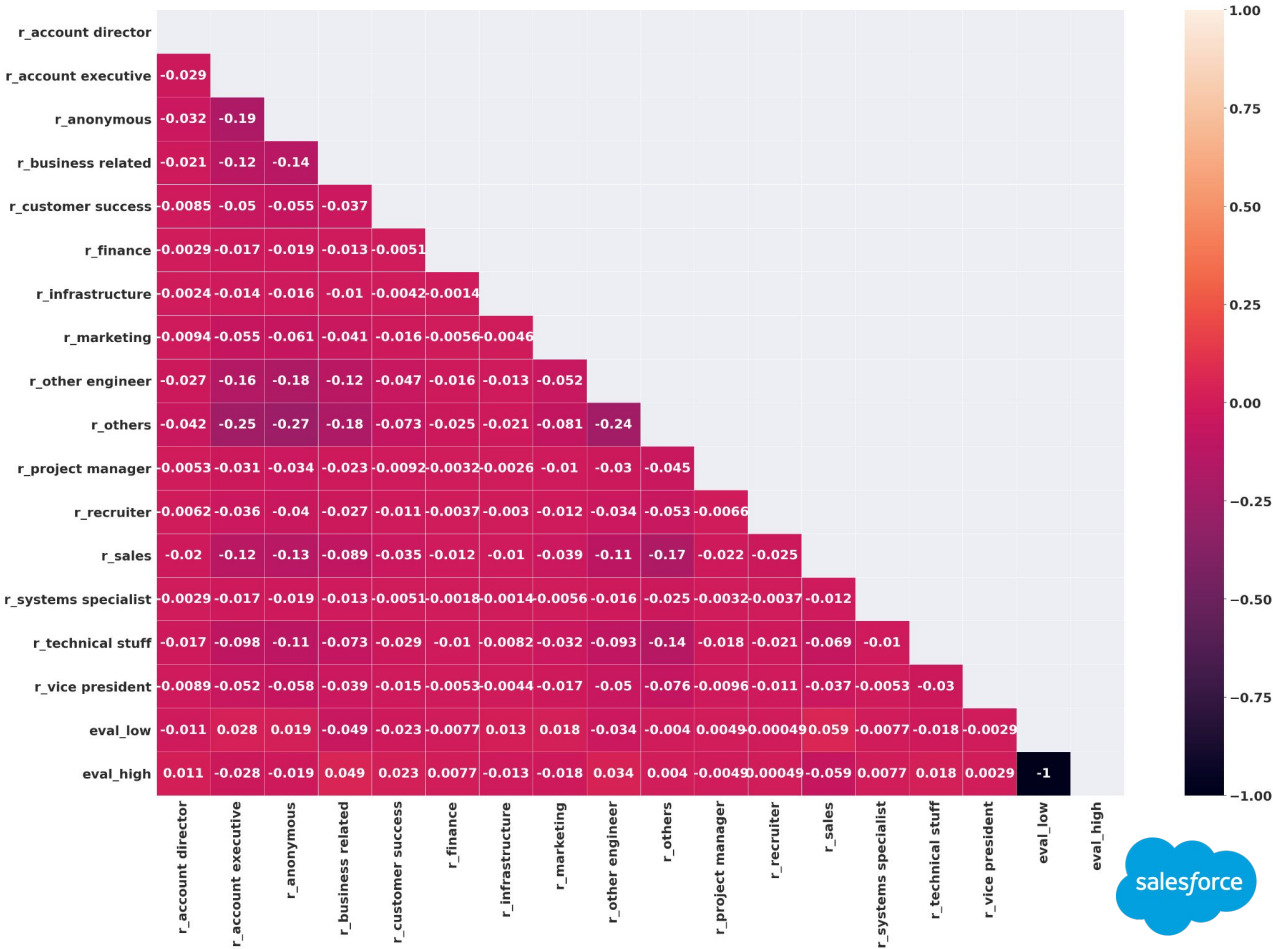
Problems stand out in some occupation

It wasn't.

Regarding low reviews, there is no
problem in any department

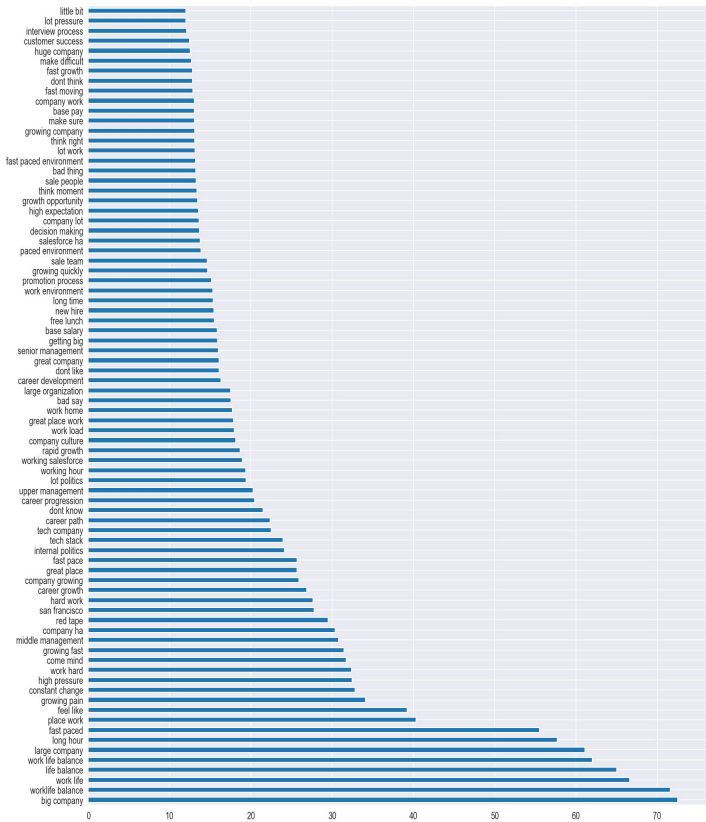
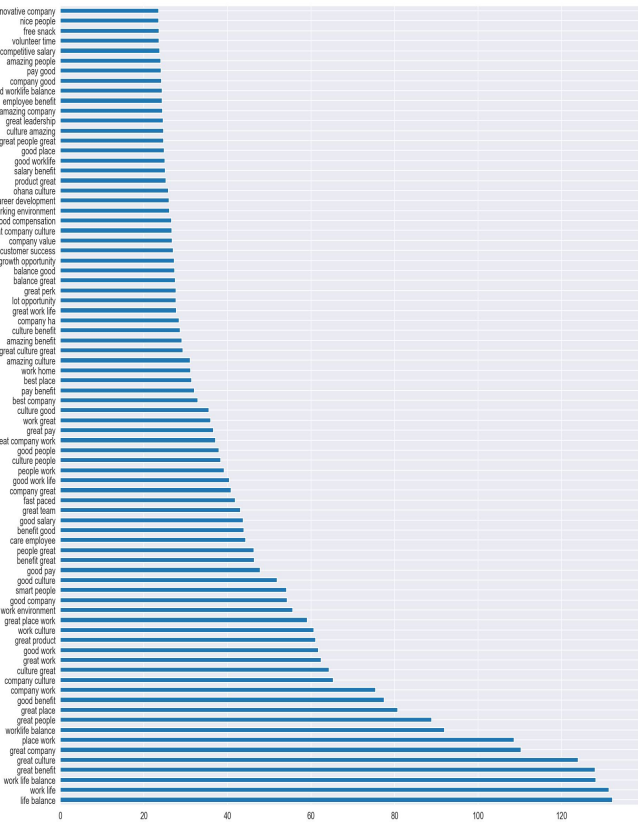
There is a company-wide policy

It can be understood.

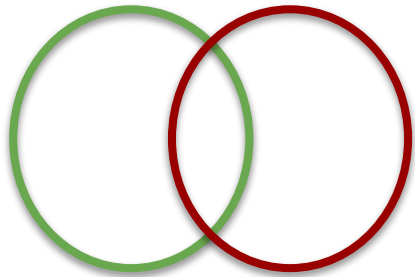


NLP Applying TF-IDF Vectorization

Top 80 words from Pros and Cons



Pros / Both / Cons



Pros

- Free snack
- Volunteer time
- good salary
- great benefit / great perks
- great product
- Ohana culture / Company value
- Lot opportunities
- Care employee

Cons

- Constant change + growing fast
 - hard work
 - long hour
 - work load
 - high pressure
 - growing pain
 - high expectation
- Management
- promotion process
- red tape
- internal politics
- tech stack
- base pay

感情分析 (pros)

Joy



89.6 %

- personal accomplishment
- feel great about something
- feel connected



Surprise



4.42 %

- unexpected things





- Disappointed by unexpected results
- Loss of certain aspects of identity (home, work, life stage transitions, etc.)



Summary and Recommendations

We can do this from an external site like this

I have analyzed global opinions and Japanese opinions to see what the problem is.

As online data increases, using tools such as social networks,

Objectively grasp the company called Salesforce with external data,

Analyze the “real intentions” of current employees and those who have changed jobs.

After 10 years of reflecting the data obtained from that in the company, a company called Salesforce

We believe that it is important for us to continue to be a company that provides job satisfaction.

Reaching a solution by analyzing the current and future state of the company from the data we have done

Would you like to create an in-house data team?



Thank you for listening!



Any Questions?



NLP - Process Explained

Original

I love Salesforce, I am loving it!

Converting into lower letters

i love salesforce, i am loving it!!

Tokenization

[["i", "love", "Salesforce", "i", "am", "loving", "it", "!"]]

Removing special characters

[["i", "love", "Salesforce", "i", "am", "loving", "it "]]

Lemmatization

[["i", "love", "Salesforce", "i", "am", "love", "it "]]

Removing stop words

[["love", "Salesforce", "love"]]

Applying TF-IDF vectorizer

(Next page)

	rating	pros
0	4.7	Working Hours/Holidays/Holidays: It's up to yo...
1	4.9	Corporate culture/corporate culture: The compa...
2	5.0	Corporate culture/corporate culture: I feel th...
3	3.8	Office environment: We moved to a new office f...
4	4.5	Working hours/holidays/holidays/holidays/holid...
...
10343	4.0	Great team members and collaboration, excellen...
10344	3.0	- PEOPLE E: Talents pool and International Grow...
10345	3.0	Good benefits, good solutions to sell
10346	5.0	- Amazing people you get to work closely with ...
10347	5.0	Great work place. Work-life balance is really ...



	rating	pros
0	4.7	[' working ', ' hoursholidaysholidays ', ' ...
1	4.9	[' corporate ', ' culturecorporate ', ' cul...
2	5.0	[' corporate ', ' culturecorporate ', ' cul...
3	3.8	[' office ', ' environment ', ' ', ' moved...
4	4.5	[' working ', ' hoursholidaysholidaysholiday...
...
10343	4.0	[' great ', ' team ', ' member ', ' ', ' ...
10344	3.0	[' peopl ', ' e ', ' talent ', ' pool ', ...
10345	3.0	[' good ', ' benefit ', ' good ', ' soluti...
10346	5.0	[' amazing ', ' people ', ' ', ' get ', ' ...
10347	5.0	[' great ', ' work ', ' place ', ' worklif...

NLP - Applying TF-IDF vectorizer

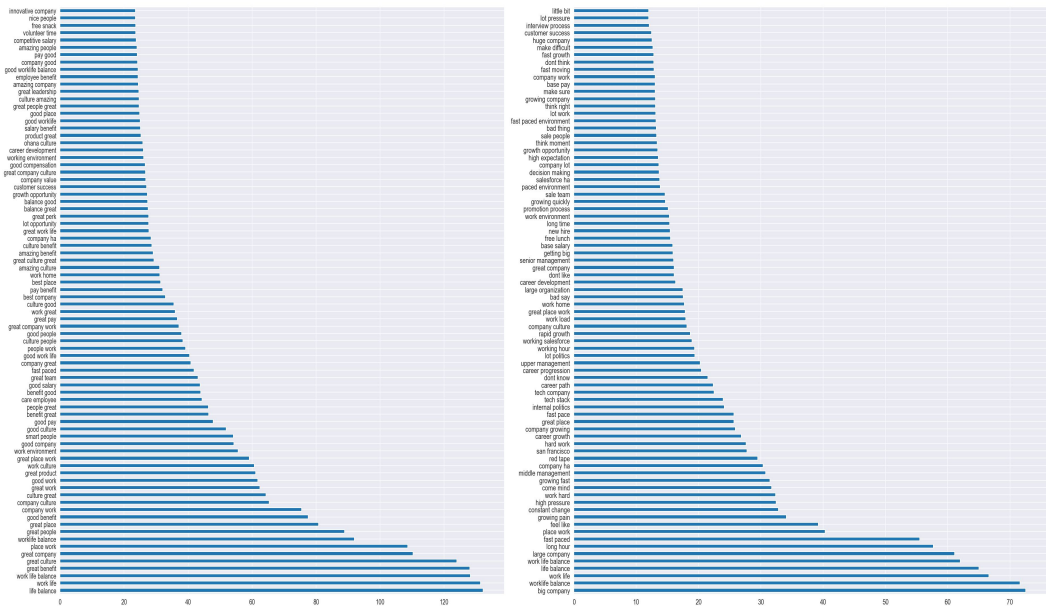
$$w_{x,y} = \text{tf}_{x,y} \times \log \left(\frac{N}{\text{df}_x} \right)$$

TF-IDF

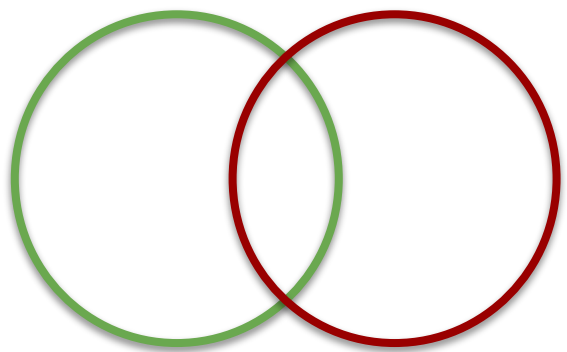
Term x within document y

$\text{tf}_{x,y}$ = frequency of x in y
 df_x = number of documents containing x
 N = total number of documents

Top 80 words from Pros and Cons



Pros / Both / Cons



NLP Analysis - Grouping top 80 texts

Pros

- Nice people / **amazing people** / great people great / good people / people great / smart people / great people
- **Free snack / great perks**
- **Volunteer time**
- Pay good / good compensation / good pay / **good salary** / great pay
- **Good worklife balance** / good worklife / balance good / balance great / work life
- Amazing company / **good place** / company great / great place work / company good / great work / great company work / good company / working environment / people work
- Salary benefit / good benefit / **great benefit**
- Product great / **great product** / Company value
- **Ohana culture** / great company culture / culture benefit / great culture great / amazing culture / culture people / good culture / culture amazing / work culture / culture great / great culture
- **Customer success**
- **Lot opportunities**
- **Work home**
- People work / place work / company ha
- **Great team**
- **Care employee**



Cons

- my company / **large company** / large organization / huge company / growing fast / getting big / growing quickly
- company growing / **growing company** / fast moving / fast growing / fast growth / fast pace / faced paced environment
- work hard / hard work / **long hour** / working long / long time / work load / high pressure / lot pressure
- place work / great place work
- growing pain / **San Francisco**
- constant change / passed environment
- come mind / feel like / don't know / don't like / don't think
- middle **management** / upper management / senior management / promotion process / new hire
- **red tape / decision making**
- company ha / salesforce ha
- **internal politics** / lot politics
- **teck stack**
- working salesforce
- bad say / **bad thing**
- base salary / **base pay**
- **free lunch**
- **company lot**
- **high expectation**
- think moment / think right
- make sure / make difficult
- little bit



Neutral (Both)

- career development / **career growth** / career path / career progression
- **growth opportunity**
- **fast paced**
- **work environment**
- **company culture**
- company work
- worklife balance / **work life balance** / work life / life balance / great balance
- **great company**
- **work home**
- **customer success**



NLP Analysis - Groups into Categories

Pros

- amazing people
- Free snack / great perks
- Volunteer time
- good salary
- good place
- great benefit
- great product /
- Company value
- Ohana culture
- Lot opportunities
- Great team
- Care employee

Doing great! Continue

Neutral (Both)

- career growth
- growth opportunity
- fast paced
- work environment
- company culture
- work life balance
- great company
- work home
- customer success

Cons

- large company
- growing fast
- hard work
- long hour
- work load
- high pressure
- growing pain
- San Francisco
- constant change
- Management (middle, upper, senior) promotion process / new hire
- red tape / decision making
- internal politics
- tech stack
- base pay
- free lunch
- company lot
- high expectation

NLP Analysis - Groups into Categories (Actionable)

Pros

- Free snack
- Volunteer time
- good salary
- great benefit / great perks
- great product
- Ohana culture / Company value
- Lot opportunities
- Care employee

Doing great! Continue

Neutral (Both)

- career growth
- growth opportunity
- fast paced
- work environment
- company culture
- work life balance
- great company
- work home
- customer success

Cons

- Constant change + growing fast
 - hard work
 - long hour
 - work load
 - high pressure
 - growing pain
 - high expectation
- Management
- promotion process
- red tape
- internal politics
- tech stack
- base pay

NLU 感情分析 (cons)

Sadness



13.5 %

- 予期せぬ結果に落胆
- アイデンティティのある側面が失われること(家庭、職場、ライフステージの転換期など)



Fear



31.7 %

- 社会的な交流や疎外感
- 周囲が暗くなる、または、見えなくなる

