

Customer complaints across Banks

Team B-08

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Background: The Consumer Financial Protection Bureau (CFPB)

- CFPB, established in the aftermath of 2007 - 08 financial crisis, protects consumers from inappropriate practices by financial organizations
- The Bureau receives thousands of complaints everyday providing information on customer issues
- Enforces laws that outlaw discrimination and other unfair treatment in consumer finance



Problem Identification

- The objective is to identify the issues faced by customer through analysis of customer complaint narratives and study the customer pain points
- This would help financial organizations to understand the customer issues and improve the product and services portfolio

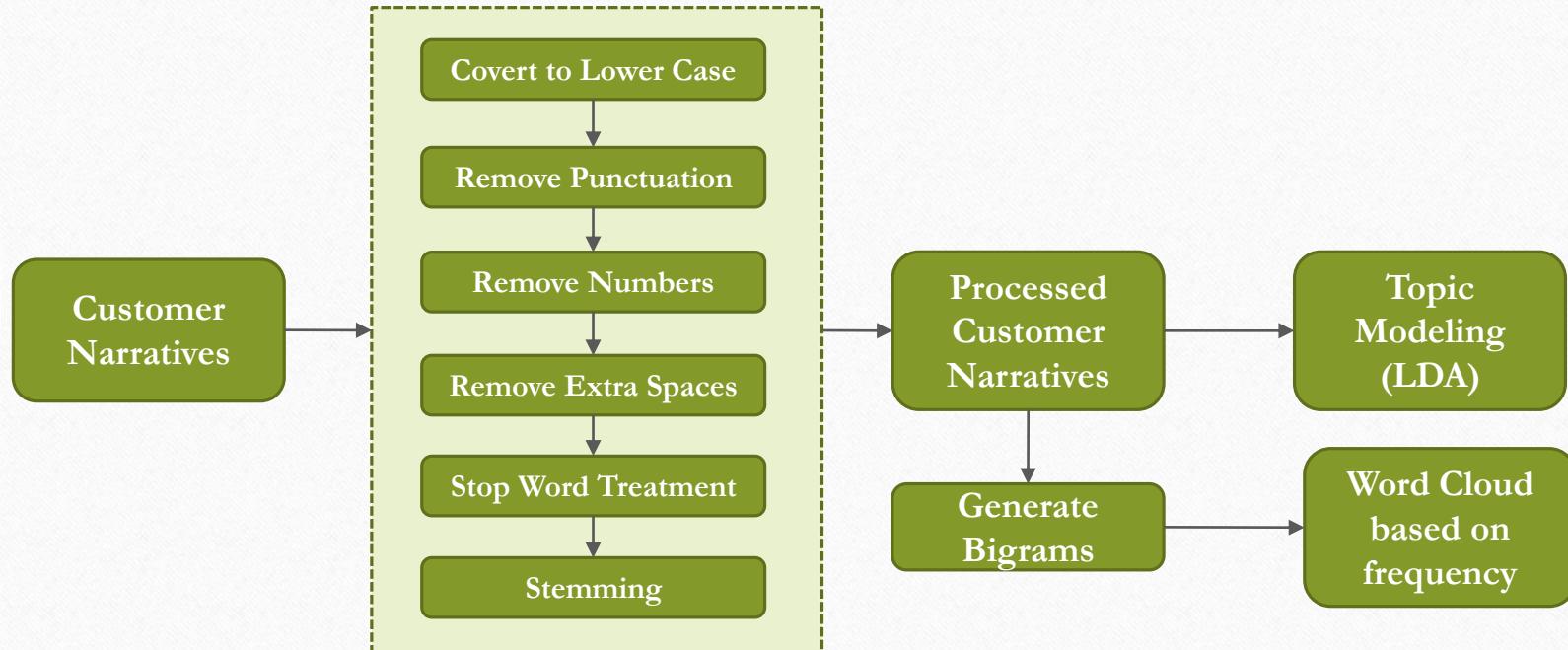
phone call make payments
receive letter phone number
loan modification
payment due call back late payment
mortgage payment home mortgage never receive
late payments fraud department credit bureaus
business day **late fees**
card company payment make years ago
past due debit card credit reporting
line credit **macy's**
within day interest rate
short sale several times
pay full
credit card
send letter citigold checking
customer service best buy
mortgage loans social security due date
make payment can't report credit
credit report don't know
credit score please help
met requirements every month

Data Overview

- The actual data collected is from "2015-03-19" - "2017-04-07"
- We have considered 1st half of 2016 as the time frame for the analysis, since the overall analysis for the entire time span is computationally heavy
- We have considered the top 5 consumer banks for analysis
 - Wells Fargo & Company
 - Bank of America
 - Citibank
 - JP Morgan Chase & Co.
 - Capital One

| CFPB Data Overview | |
|---|-------------|
| Fields - 16 | Rows - 7061 |
| <i>Used Fields:</i> Consumer complaint narrative Date received Company | |

Methodology

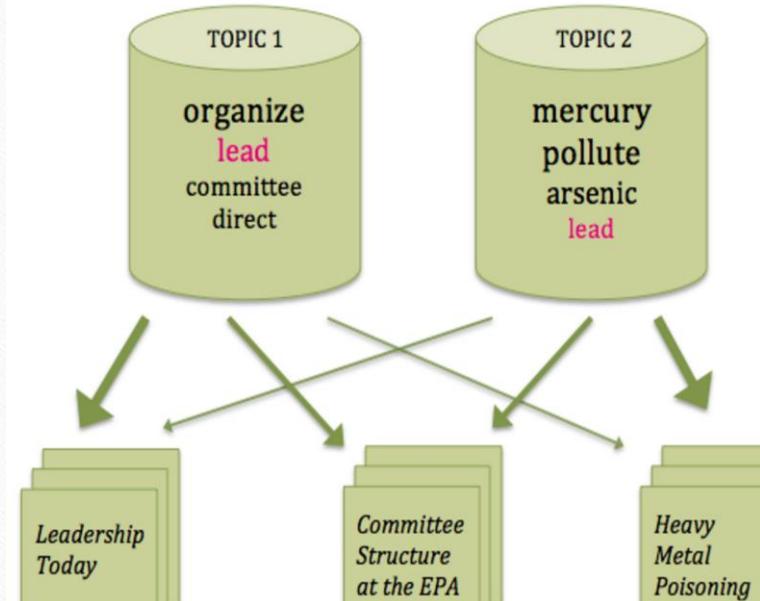


Packages used: tm, wordcloud, topicmodels, Rweka, ldatuning, SnowballC

Topic Modeling

Latent Dirichlet Allocation (LDA):

- A way of extrapolating backward from a collection of documents to infer the discourses (“topics”) and latent structure that could have generated them
- Update the probability of topics for a document and words for a topic after each iteration of allocating topics to a document



Number of Topics : 7 VS 6

| 7 Topics | | | | | | |
|-----------|--------------|-----------|----------|-------------|---------------|---------|
| Late Pay | Loan | Promotion | Fee | Credit Card | Communication | General |
| pay | loan | receive | money | credit | call | get |
| payment | mortgage | day | check | card | send | time |
| make | home | open | day | report | information | help |
| payments | modification | service | funds | charge | receive | want |
| month | documents | offer | fees | charges | letter | years |
| balance | property | customer | make | fraud | phone | take |
| due | process | month | close | debt | number | know |
| interest | foreclosure | new | fee | company | asked | never |
| late | sale | points | return | never | request | even |
| statement | request | promotion | business | close | back | going |

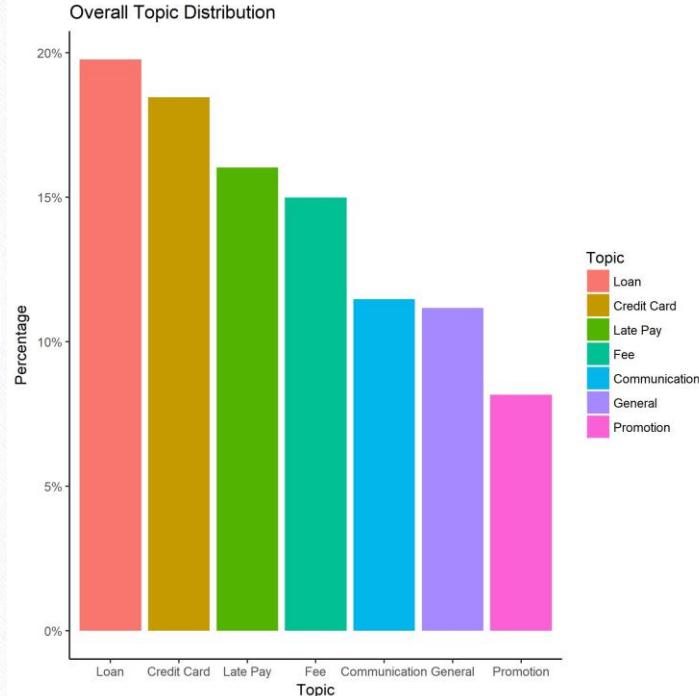
| 6 Topics | | | | | |
|----------|--------------|-----------|--------|-------------|---------|
| Late Pay | Loan | Promotion | Mixed | Credit Card | General |
| pay | loan | receive | call | credit | get |
| payment | mortgage | day | check | card | time |
| make | home | service | day | report | help |
| payments | modification | open | phone | information | want |
| month | request | send | money | debt | never |
| balance | letter | offer | back | fraud | years |
| due | documents | contacted | asked | charges | even |
| interest | property | new | funds | close | know |
| late | process | checking | number | charge | take |
| fees | foreclosure | email | return | accounts | send |

Number of Topics : 7 VS 8

| 7 Topics | | | | | | |
|-----------|--------------|-----------|----------|-------------|---------------|---------|
| Late Pay | Loan | Promotion | Fee | Credit Card | Communication | General |
| pay | loan | receive | money | credit | call | get |
| payment | mortgage | day | check | card | send | time |
| make | home | open | day | report | information | help |
| payments | modification | service | funds | charge | receive | want |
| month | documents | offer | fees | charges | letter | years |
| balance | property | customer | make | fraud | phone | take |
| due | process | month | close | debt | number | know |
| interest | foreclosure | new | fee | company | asked | never |
| late | sale | points | return | never | request | even |
| statement | request | promotion | business | close | back | going |

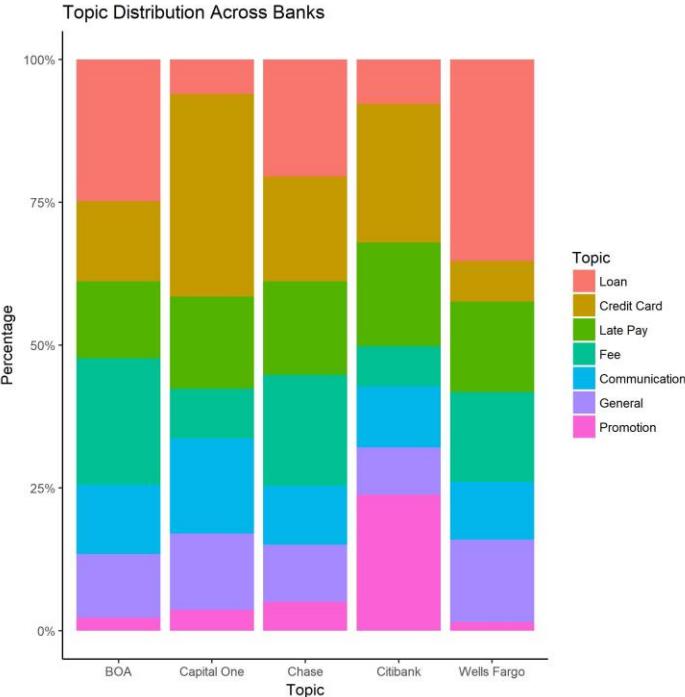
| 8 Topics | | | | | | | |
|-----------|--------------|-----------|----------|-------------|----------------|----------------|---------|
| Late Pay | Loan | Promotion | Fee | Credit Card | Communication1 | Communication2 | General |
| pay | loan | receive | check | credit | call | provide | get |
| payment | mortgage | day | money | card | send | information | help |
| make | home | service | day | report | receive | debt | time |
| month | modification | open | funds | charge | phone | letter | years |
| payments | property | offer | fees | charges | asked | complaint | want |
| balance | foreclosure | customer | fee | fraud | back | request | even |
| due | process | month | return | close | number | send | like |
| interest | documents | points | business | never | information | case | take |
| late | sale | promotion | make | reporting | never | consumer | going |
| statement | house | within | branch | macy | spoke | filed | know |

Topic Distribution: Overall



| Late Pay | Loan | Promoti on | Fee | Credit Card | Communi cation | General |
|-----------|--------------|---------------|----------|----------------|-------------------|---------|
| pay | loan | receive | money | credit | call | get |
| payment | mortgage | day | check | card | send | time |
| make | home | open | day | report | information | help |
| payments | modification | service | funds | charge | receive | want |
| month | documents | offer | fees | charges | letter | years |
| balance | property | customer | make | fraud | phone | take |
| due | process | month | close | debt | number | know |
| interest | foreclosure | new | fee | company | asked | never |
| late | sale | points | return | never | request | even |
| statement | request | promotion | business | close | back | going |

Topic Distribution: Across Banks



| Late Pay | Loan | Promotion | Fee | Credit Card | Communication | General |
|-----------|--------------|-----------|----------|-------------|---------------|---------|
| pay | loan | receive | money | credit | call | get |
| payment | mortgage | day | check | card | send | time |
| make | home | open | day | report | information | help |
| payments | modification | service | funds | charge | receive | want |
| month | documents | offer | fees | charges | letter | years |
| balance | property | customer | make | fraud | phone | take |
| due | process | month | close | debt | number | know |
| interest | foreclosure | new | fee | company | asked | never |
| late | sale | points | return | never | request | even |
| statement | request | promotion | business | close | back | going |

Customer complaints primarily revolve around services involving cards, loans and customer service

All Banks:



| Terms | Frequency |
|-------------------|-----------|
| credit card | 3404 |
| credit report | 986 |
| customer service | 986 |
| macy's | 866 |
| loan modification | 845 |
| late fees | 724 |
| phone call | 568 |
| call back | 554 |
| credit score | 487 |
| interest rate | 461 |
| make payment | 442 |
| receive letter | 442 |
| debit card | 436 |
| never receive | 426 |
| short sale | 417 |

Credit cards and loans are the main customer pain points among Bank of America customers

Interest rate
can't
please help
customer service
credit report
loan modification
credit card
credit reporting

mortgage loan
mortgage payment
even though
make payment
home loan debit card
make payments
receive letter short sale
several times
call back
credit score credit bureaus
years ago past due never receive

| Terms | Frequency % |
|-------------------|-------------|
| credit card | 5.83% |
| loan modification | 2.80% |
| credit report | 2.36% |
| customer service | 1.96% |
| short sale | 1.49% |
| call back | 1.25% |
| debit card | 1.19% |
| interest rate | 1.07% |
| mortgage loan | 1.03% |
| receive letter | 0.98% |

Total number of mentions of all terms - 9545

Engagement between Citibank and retailers such as Best Buy and Macy's has resulted in customer complaints

customer service
open citigold credit report
best buy home depot
pay full bill pay
thank pointseven though
debit card late fees bonus miles
call back late fee within day
credit card
s credit make payment credit score
citi gold checking promotional offer
met requirements receive letter
never receive
macy s

| Terms | Frequency % |
|--------------------|-------------|
| credit card | 6.62% |
| macy's | 4.68% |
| customer service | 2.23% |
| credit report | 1.38% |
| citi gold checking | 1.10% |
| best buy | 1.10% |
| met requirements | 1.09% |
| late fees | 1.96% |
| debit card | 0.91% |
| credit score | 0.87% |

Total number of mentions of all terms - 18495

Credit cards and Customer service issues dominate the pain points of Capital One customers



| Terms | Frequency % |
|------------------|-------------|
| credit card | 10.52% |
| credit report | 3.66% |
| customer service | 1.76% |
| call back | 1.61% |
| make payment | 1.37% |
| credit bureaus | 1.31% |
| credit score | 1.22% |
| kohl's | 1.09% |
| never receive | 1.09% |
| credit reporting | 1.01% |

Total number of mentions of all terms - 5331

Issues with Credit cards and Customer services are the major pain points of JP Morgan Chase customers

credit score
make payments
credit card
credit reporting credit report even though
please help send letter of sale business day
debit card past due make payment
within day to pay full
late payment escrow account
loan modification
customer service
call back
interest rate
never receive
social security
receive letter several times

| Terms | Frequency % |
|-------------------|-------------|
| credit card | 9.42% |
| credit report | 2.31% |
| customer service | 1.93% |
| loan modification | 1.75% |
| interest rate | 1.51% |
| credit score | 1.37% |
| call back | 1.28% |
| receive letter | 1.24% |
| short sale | 1.11% |
| debit card | 0.97% |

Total number of mentions of all terms - 8172

Issues with Loan offerings and services are the primary concern among Wells Fargo customers

loan modification
even though short sale
make payment now
mortgage loan interest rate
receive letter past due
customer service
per month call back
please help home equity
make payments
sale date can
credit report
mortgage payment
home preservation
mortgage company
preservation specialist
mortgage payments

home mortgage

| Terms | Frequency % |
|-------------------|-------------|
| loan modification | 3.33% |
| credit card | 2.74% |
| home mortgage | 2.05% |
| short sale | 1.33% |
| customer service | 1.27% |
| credit report | 1.15% |
| interest rate | 1.13% |
| make payments | 1.07% |
| call back | 1.00% |
| mortgage company | 0.99% |

Total number of mentions of all terms - 10651

Summary

- Focus areas of customer complaints from Topic Modeling and Word Cloud analyses are Credit Cards and Loans
- Citibank customers experience difficulties using the exclusive promotion offers in Macy's and Best Buy
- Customers belonging to Bank of America and Wells Fargo experience higher difficulties related to Loans/Mortgages
- Chase and Capital One customers experience problems with Credit card and Customer service

Thank You!

Q & A