Quantitative features in science-popular texts: text difficulty

Kseniia Samoylenko

Hypothesis

- texts about physics, math and space (‘exact’ science) are more difficult, than about humanities
- difficulty of media sources is differents

Data

Sources

N+1 π GT

Индикатор

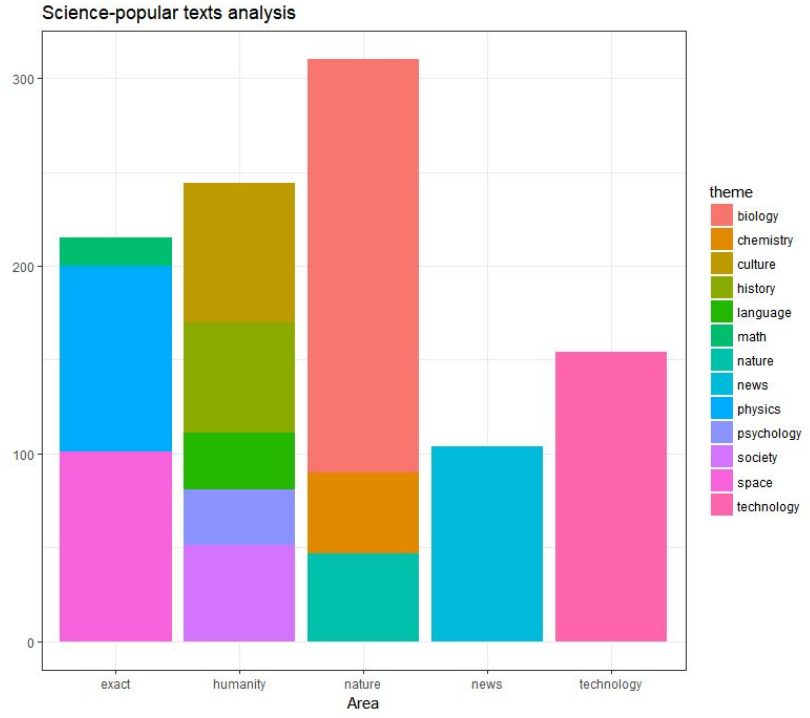
ПОЛИТ.РУ

научно-популярный портал Чердак

Variables

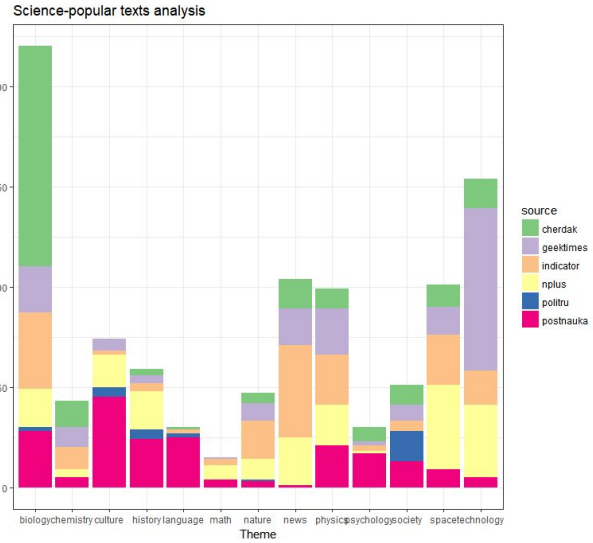
- quantitative features:
- readability indexes
- dictionaries
- POS-tags

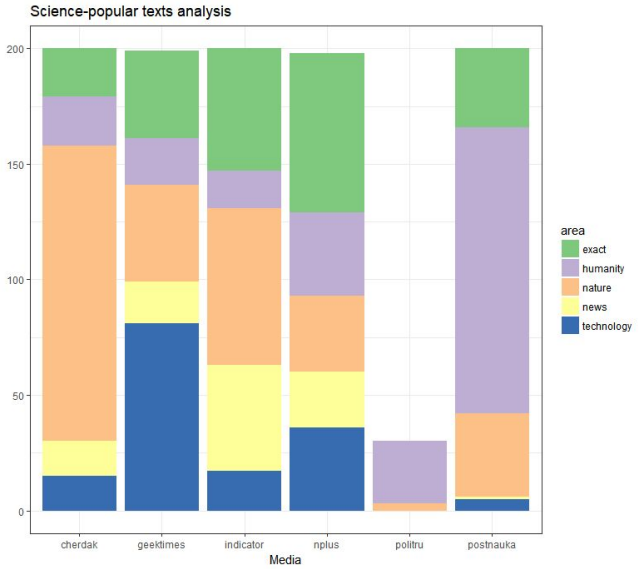
Areas and thems

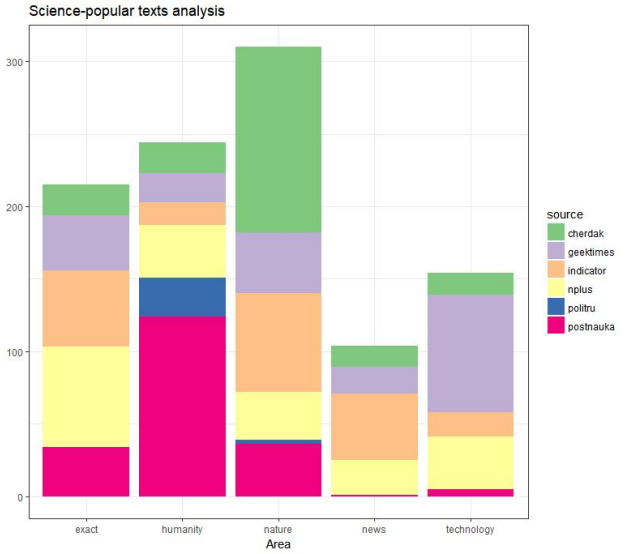


Descriptive analysis

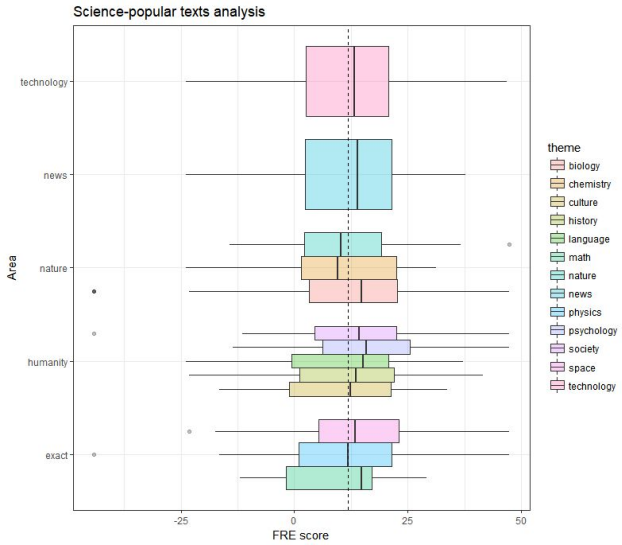
Thems and sources distribution

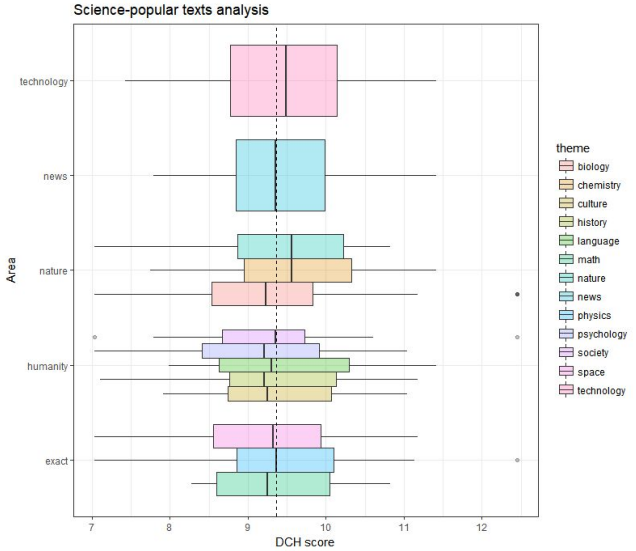


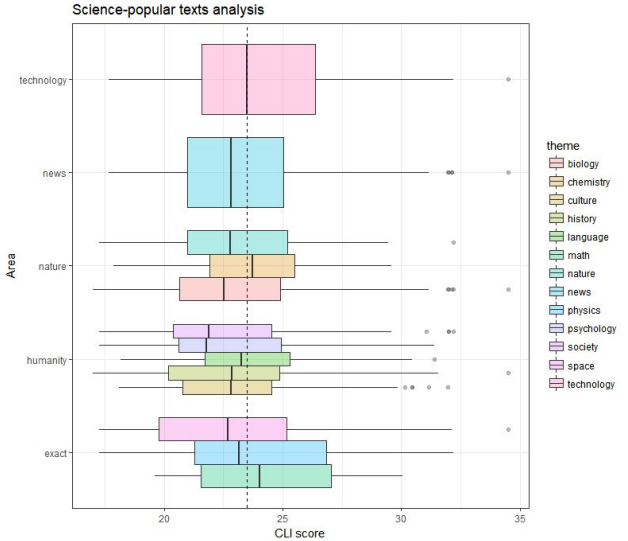




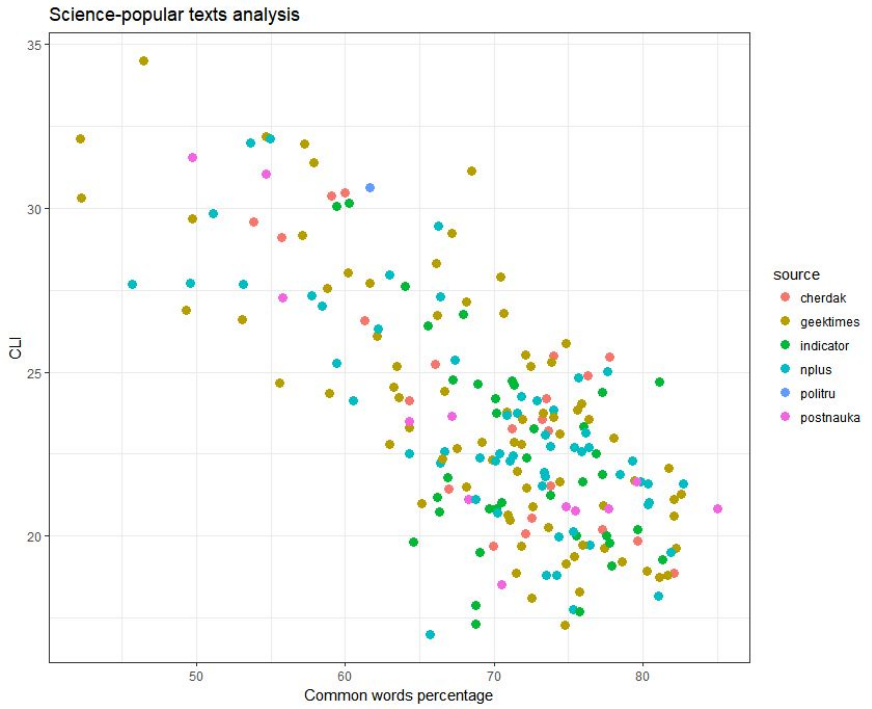
Difficulty distribution

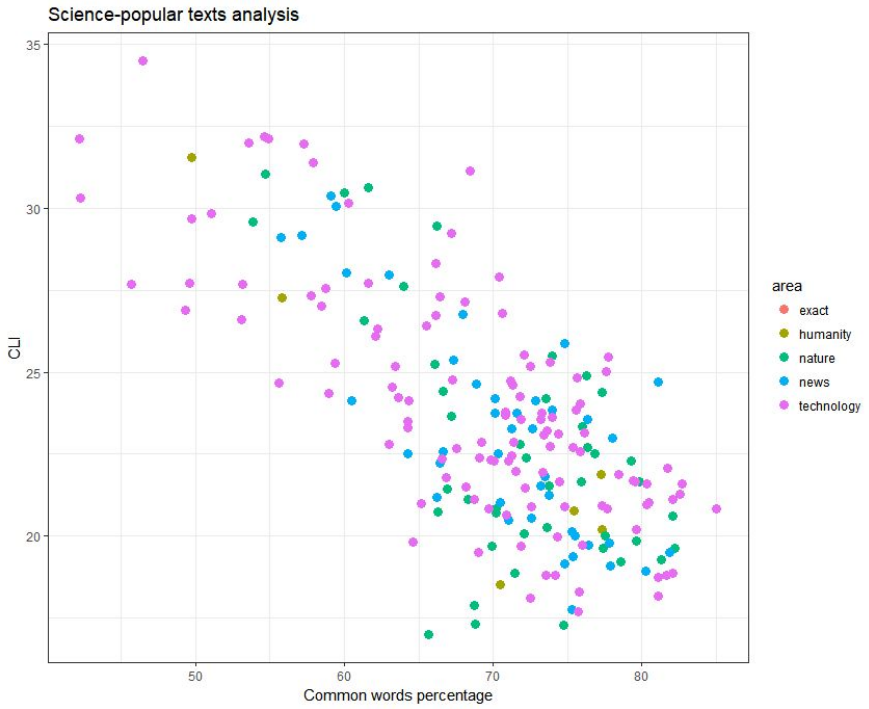






Common words in science and media





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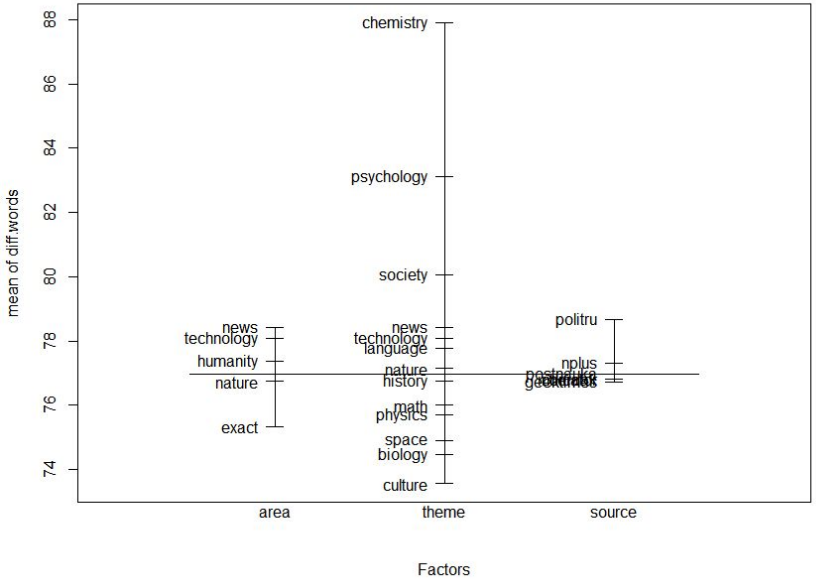

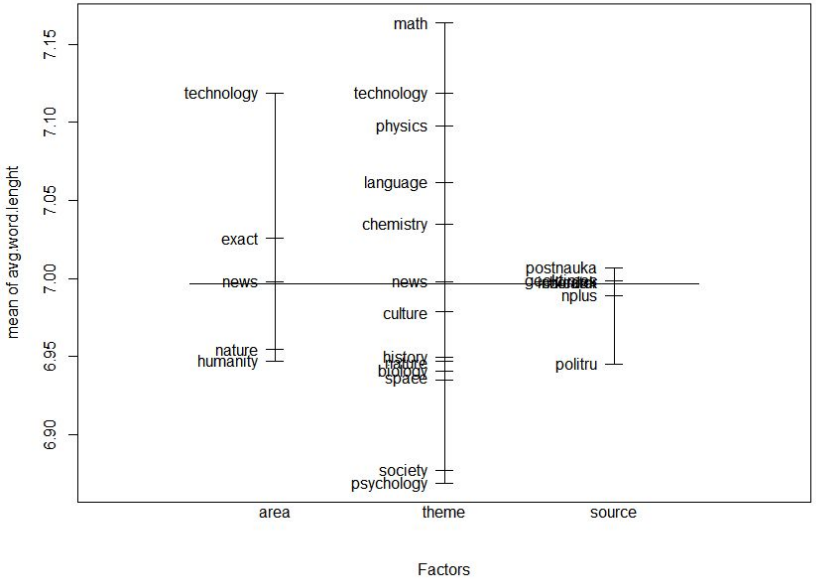

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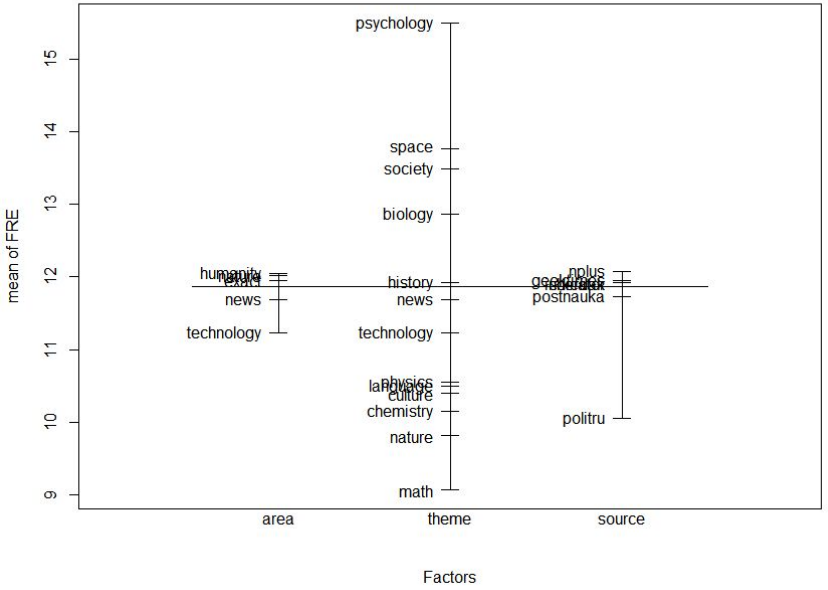

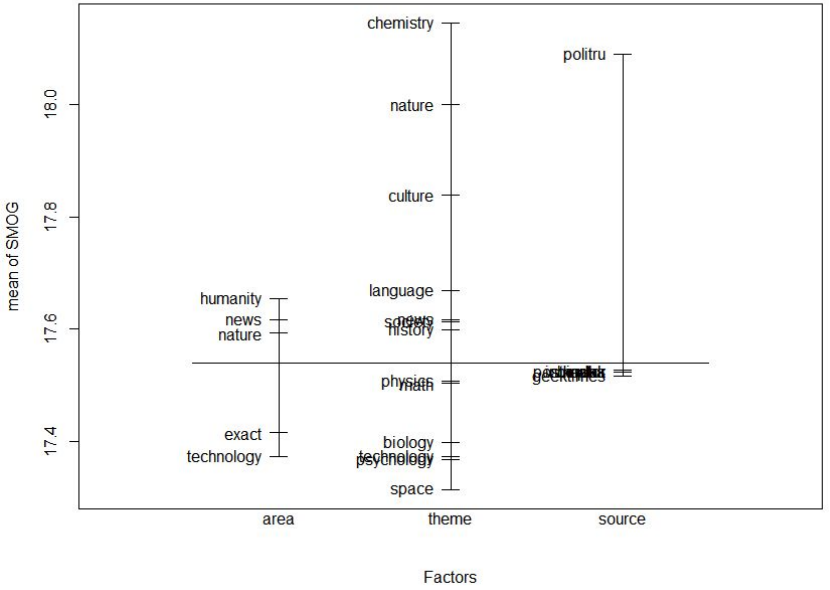

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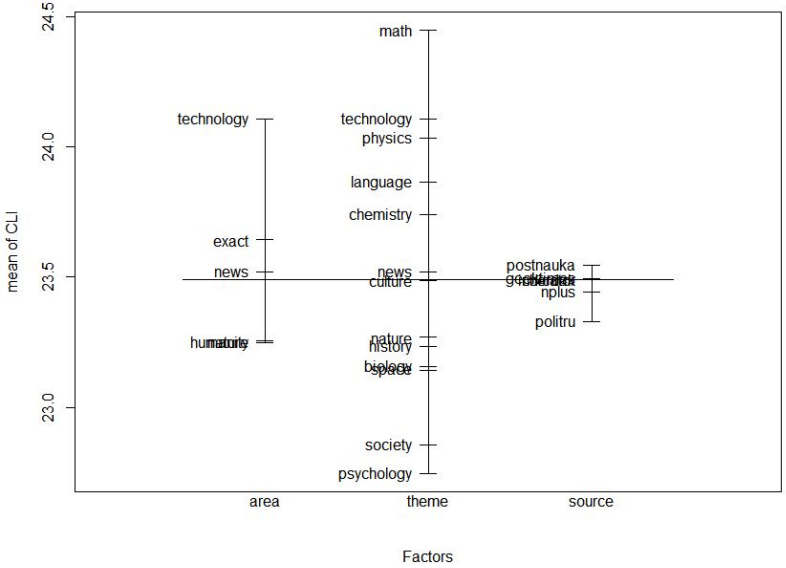

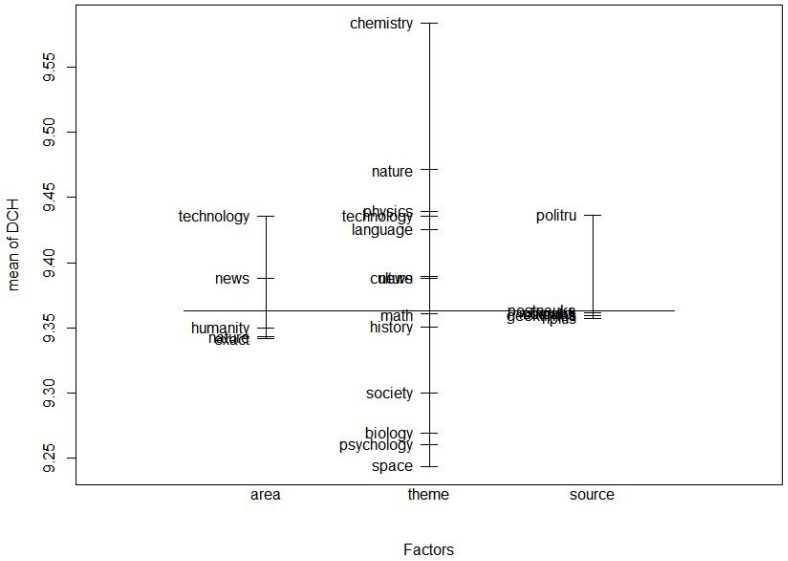

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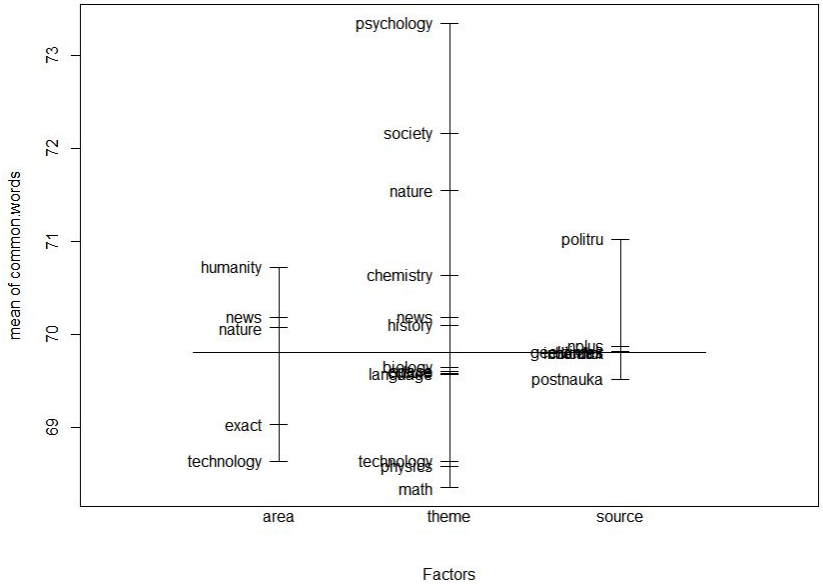
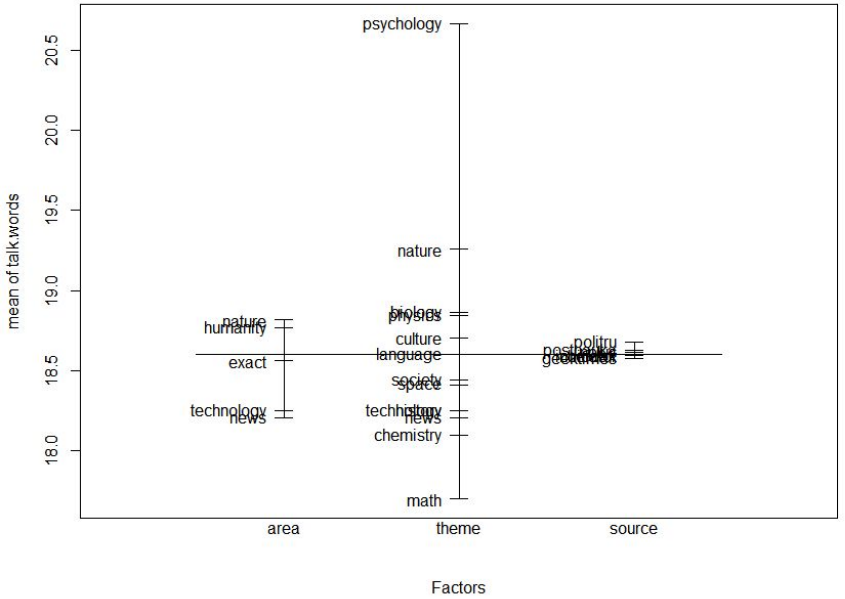
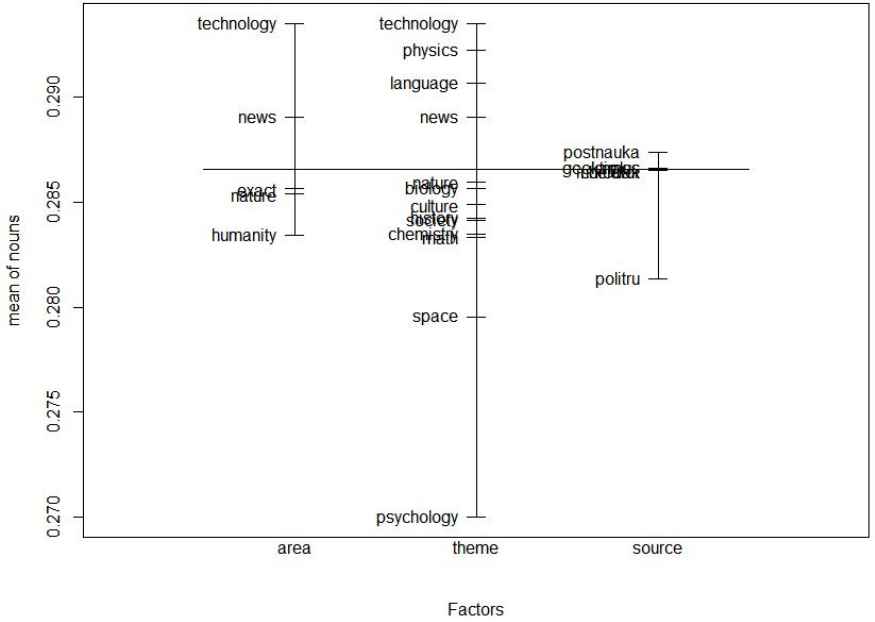
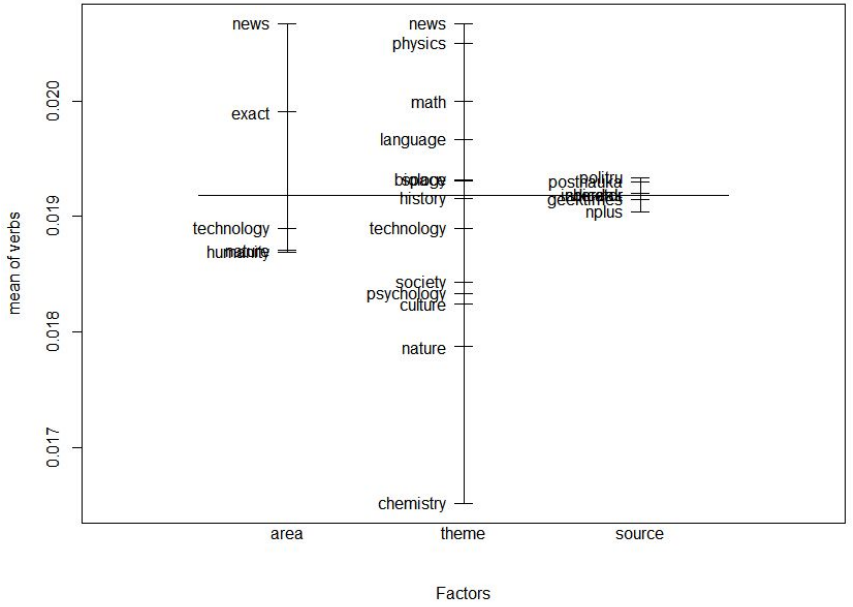


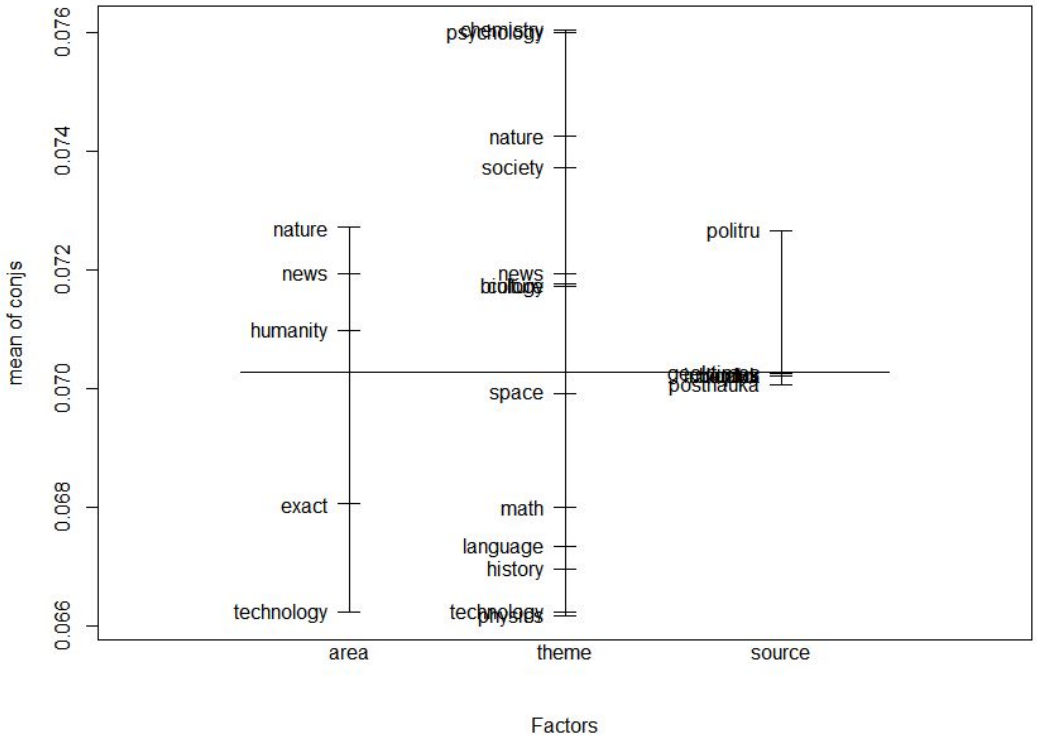


Data Summary

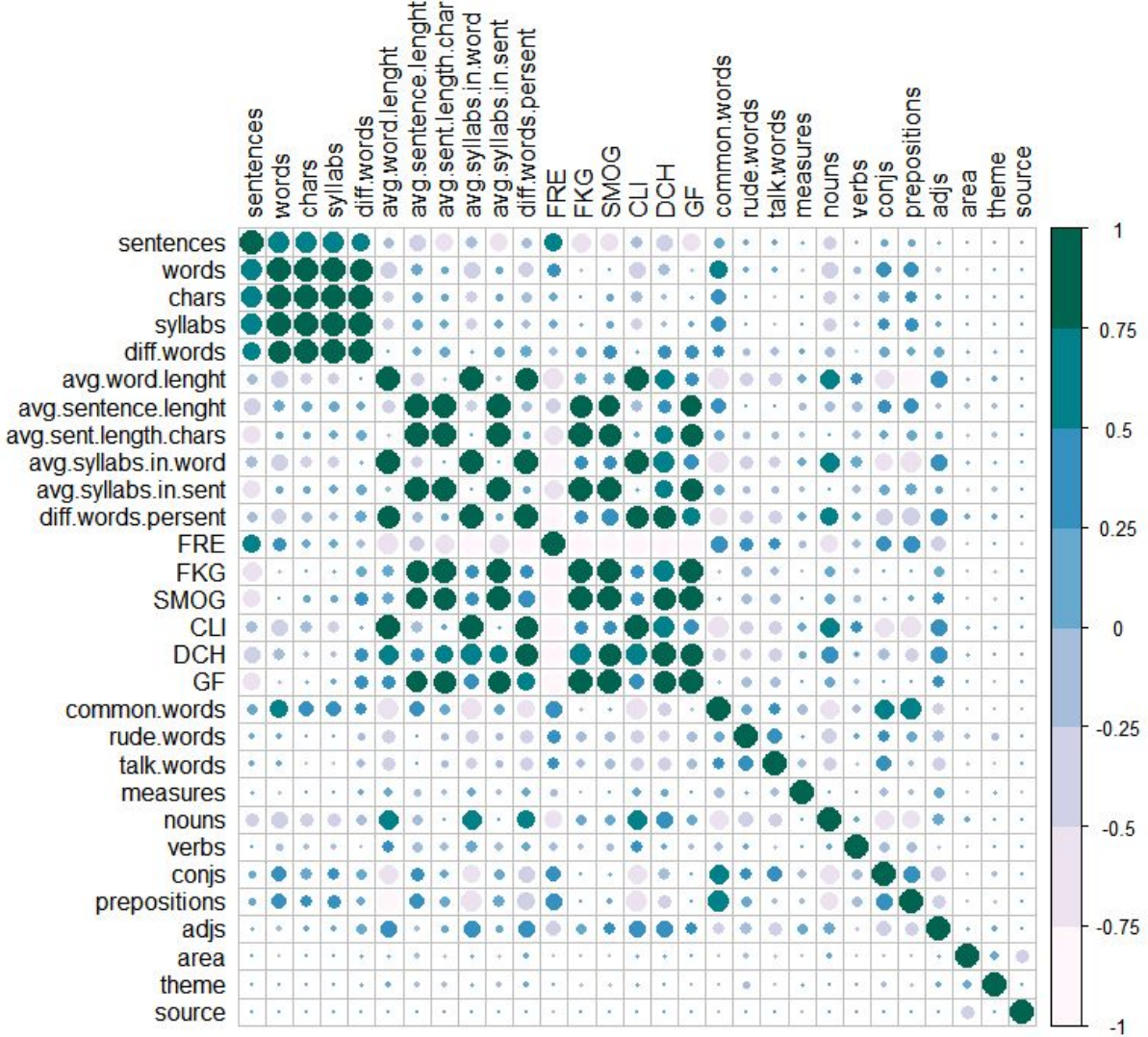




Data summary



Correlations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words
chars
syllabs
diff.words
avg.word.lenght
avg.sentence.lenght
avg.sent.length.chars
avg.syllabs.in.word
avg.syllabs.in.sent
diff.words.persent
FRE
FKG
SMOG
CLI
DCH
GF
common.words
rude.words
talk.words
measures
nouns
verbs
conjs
prepositions
adjs
area
theme
source
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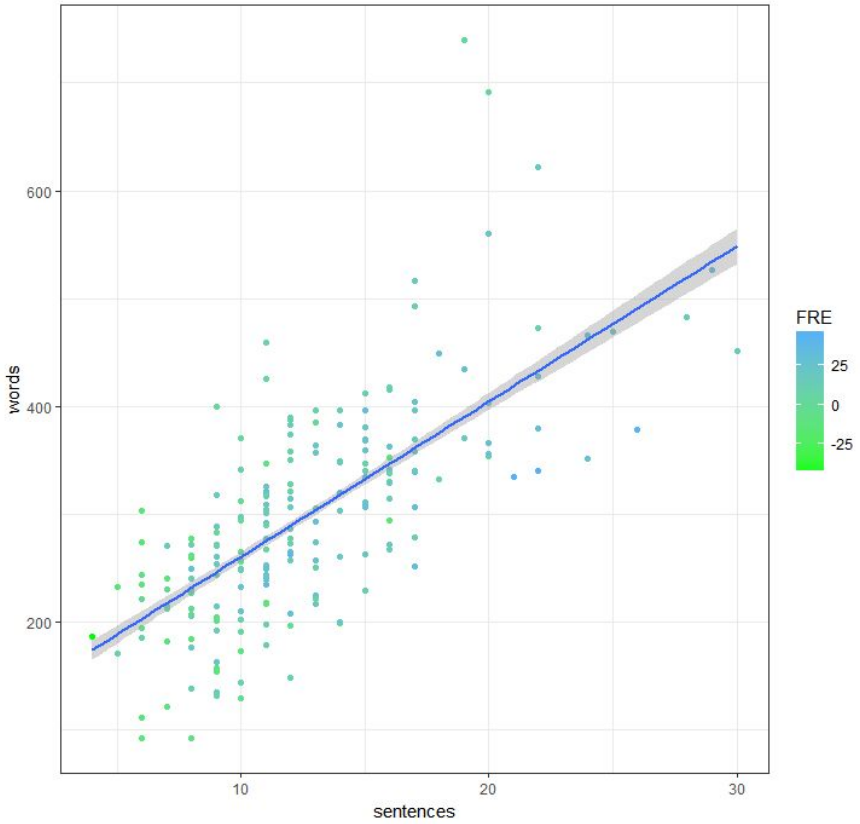
0.75
0.5
0.25
0
-0.25
-0.5
-0.75
-1

Regressions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400
200
10
20
30
sentences
FRE
25
0
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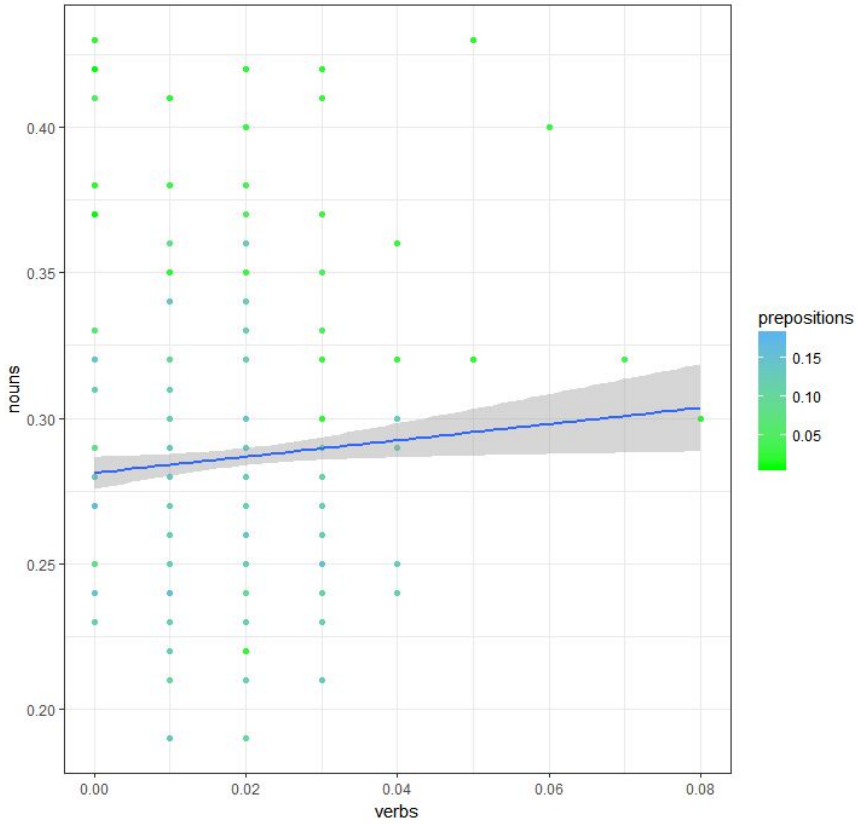
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0.35
0.30
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0.00
0.02
0.04
0.06
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verbs
prepositions
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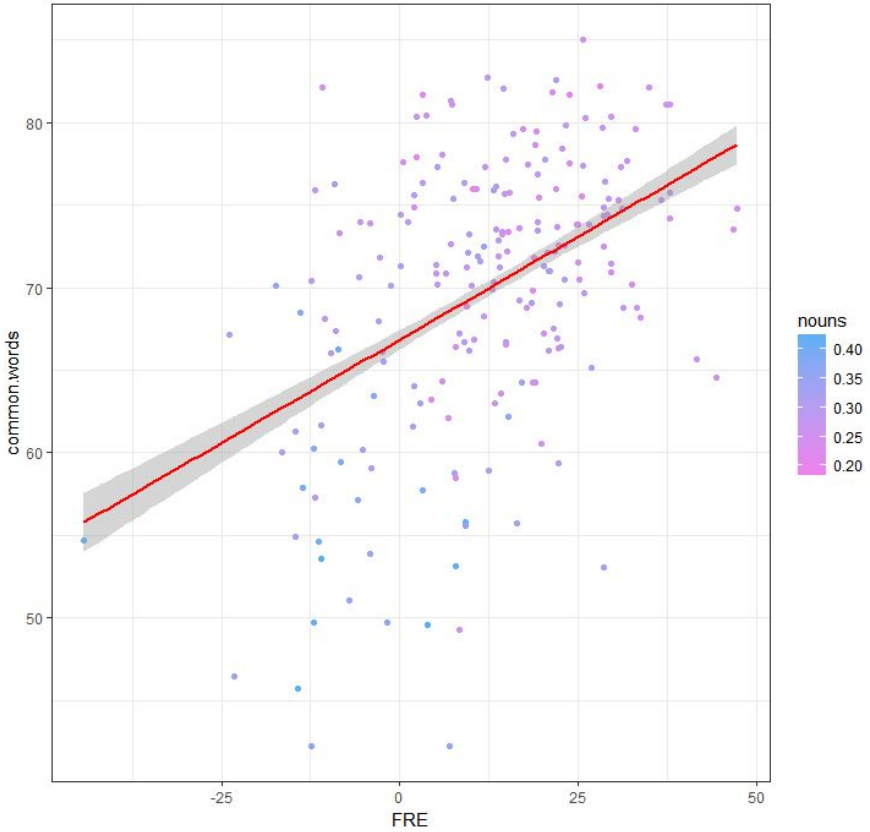
0.10
0.05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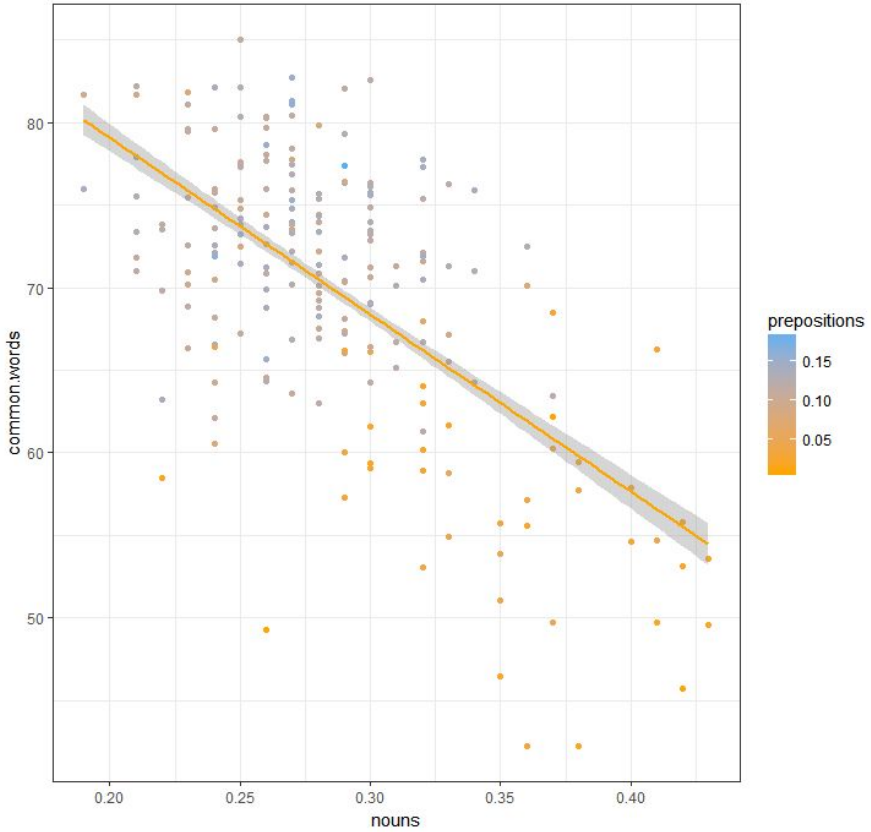
60
50
-25
0
25
50
FRE
nouns
0.40
0.35
0.30
0.25
0.20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nouns
prepositions
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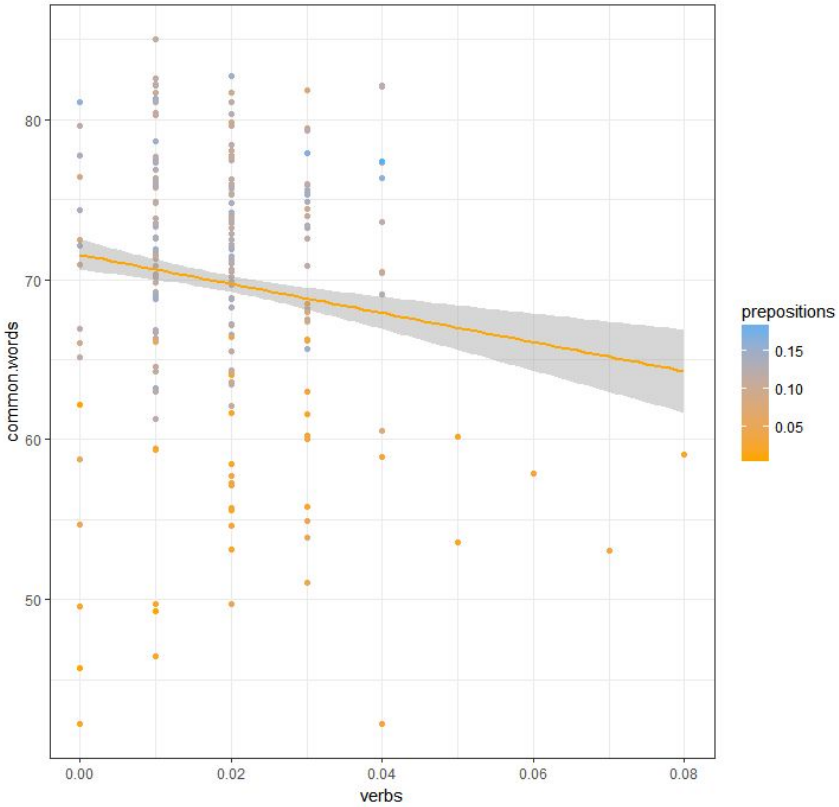
0.05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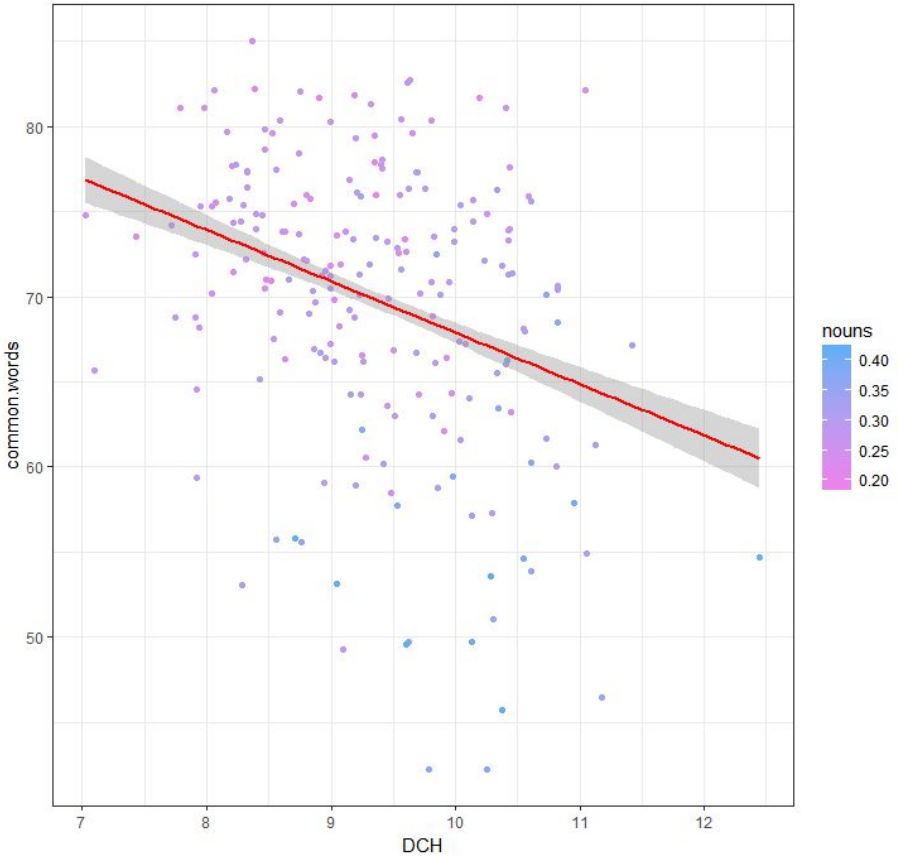
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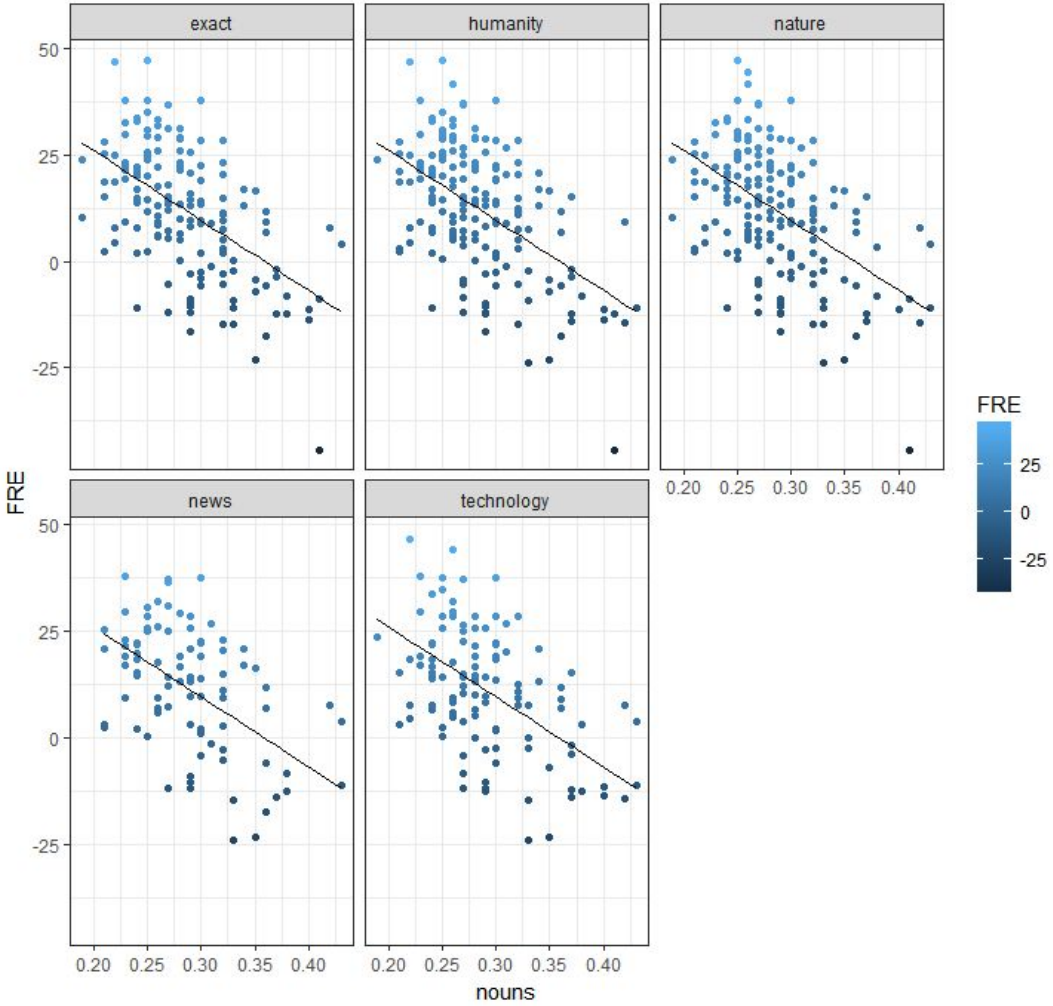
0.30
0.25
0.20

Mixed-effect model


exact
humanity
nature
news
technology
FRE
nouns
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25
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25
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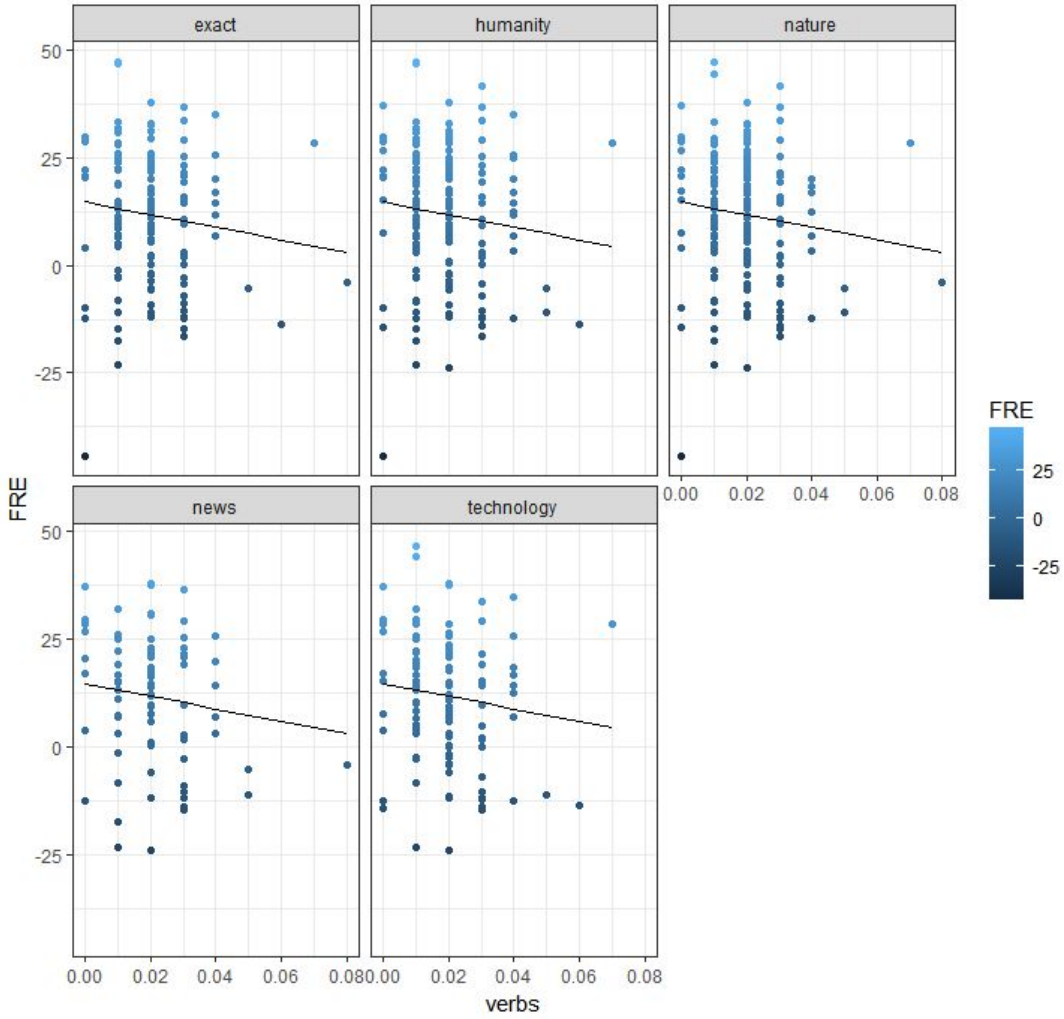
exact
humanity
nature
news
technology
FRE
verbs
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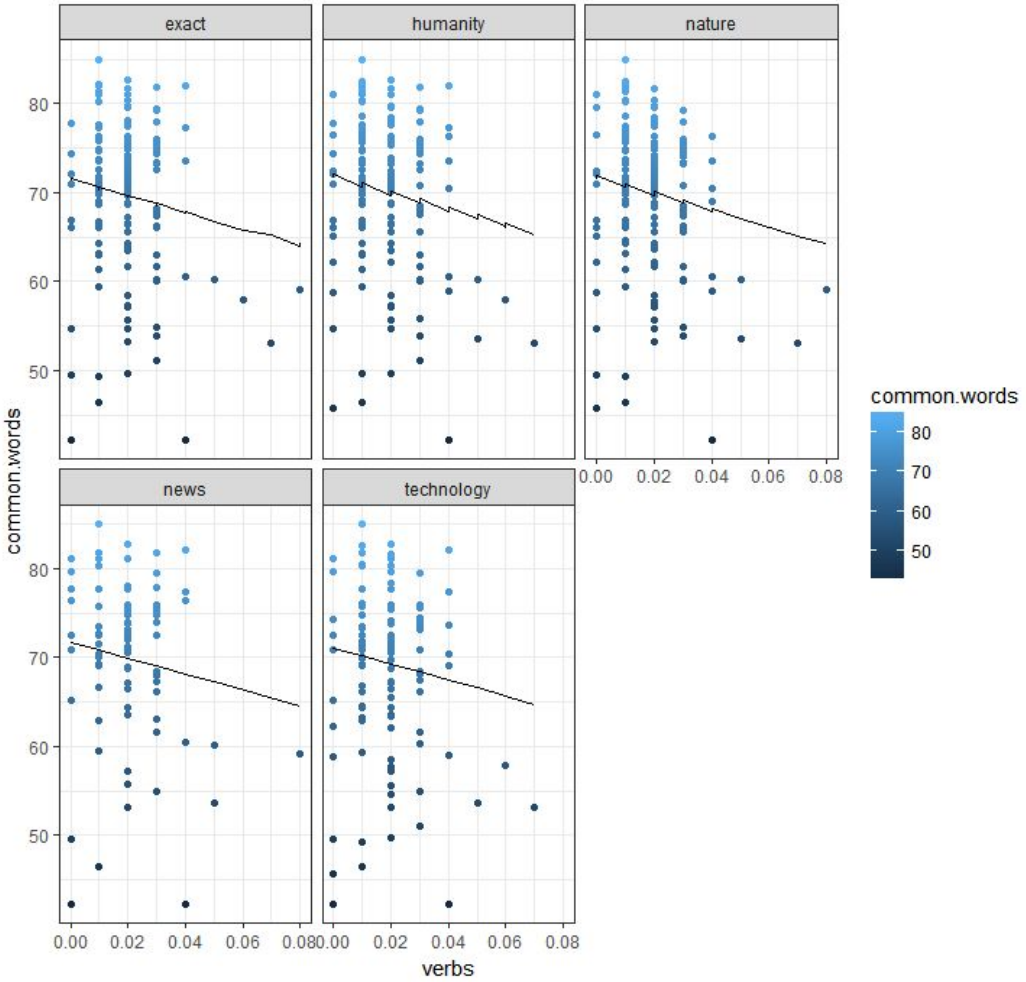
FRE
25
0
-25


exact
humanity
nature
news
technology
common.words
verbs
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70
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0.00
0.02
0.04
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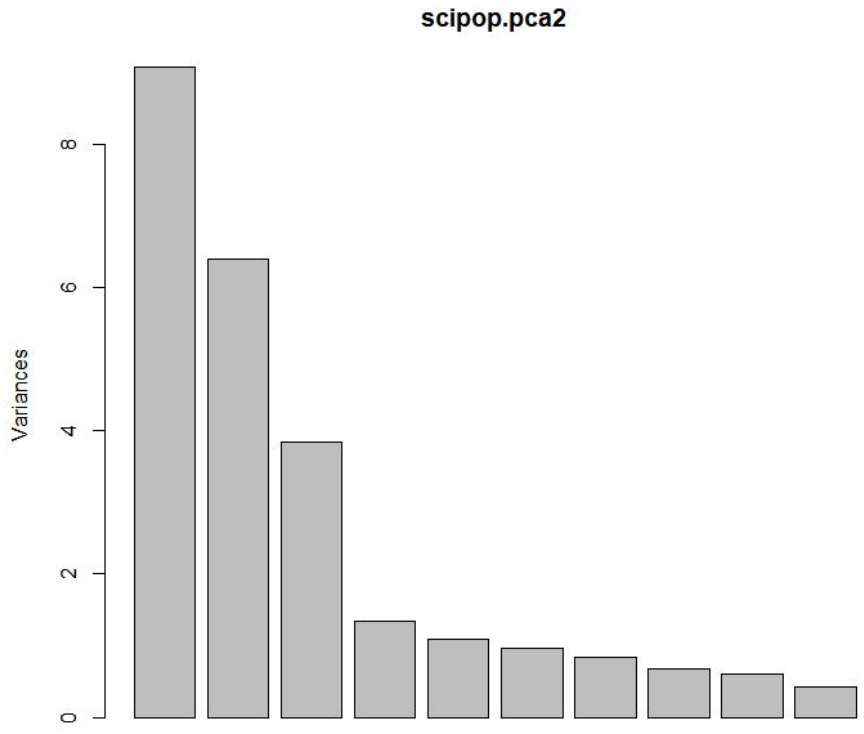
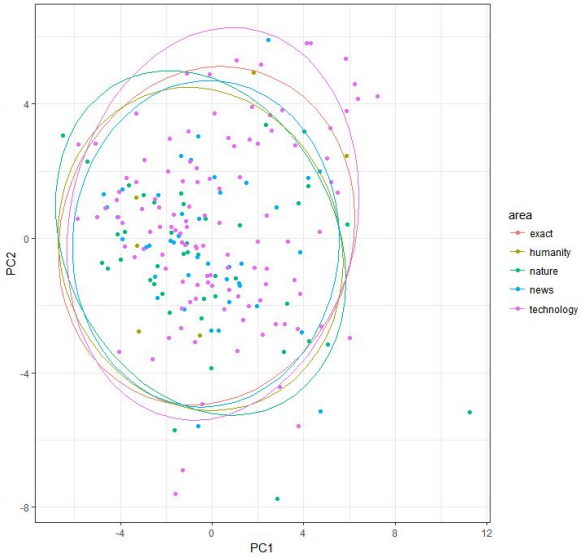
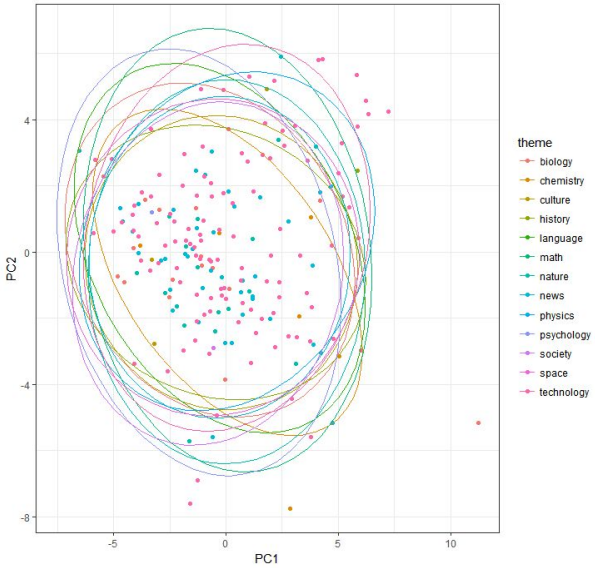
0.08
common.words
80
70
60
50

PCA


scipop.pca2
Variances
0
2
4
6
8


PC2
PC1
4
0
-4
-8
-4
0
4
8
12
area
exact
humanity
nature
news
technology


PC2
PC1
4
0
-4
-8
-5
0
5
10
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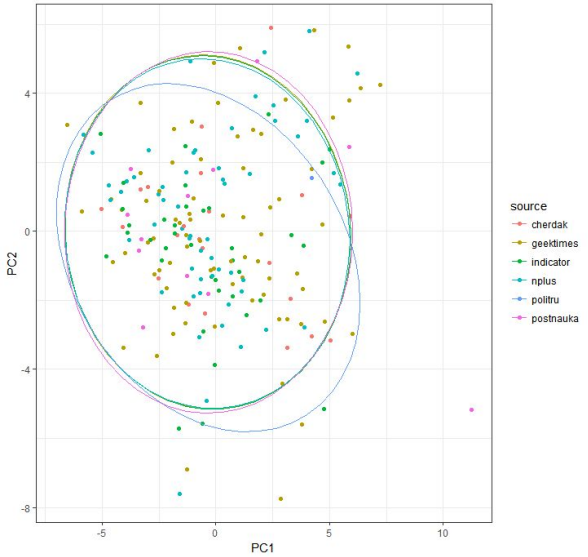
culture
history
language
math
nature
news
physics
psychology
society
space
technology


PC2
PC1
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-8
-5
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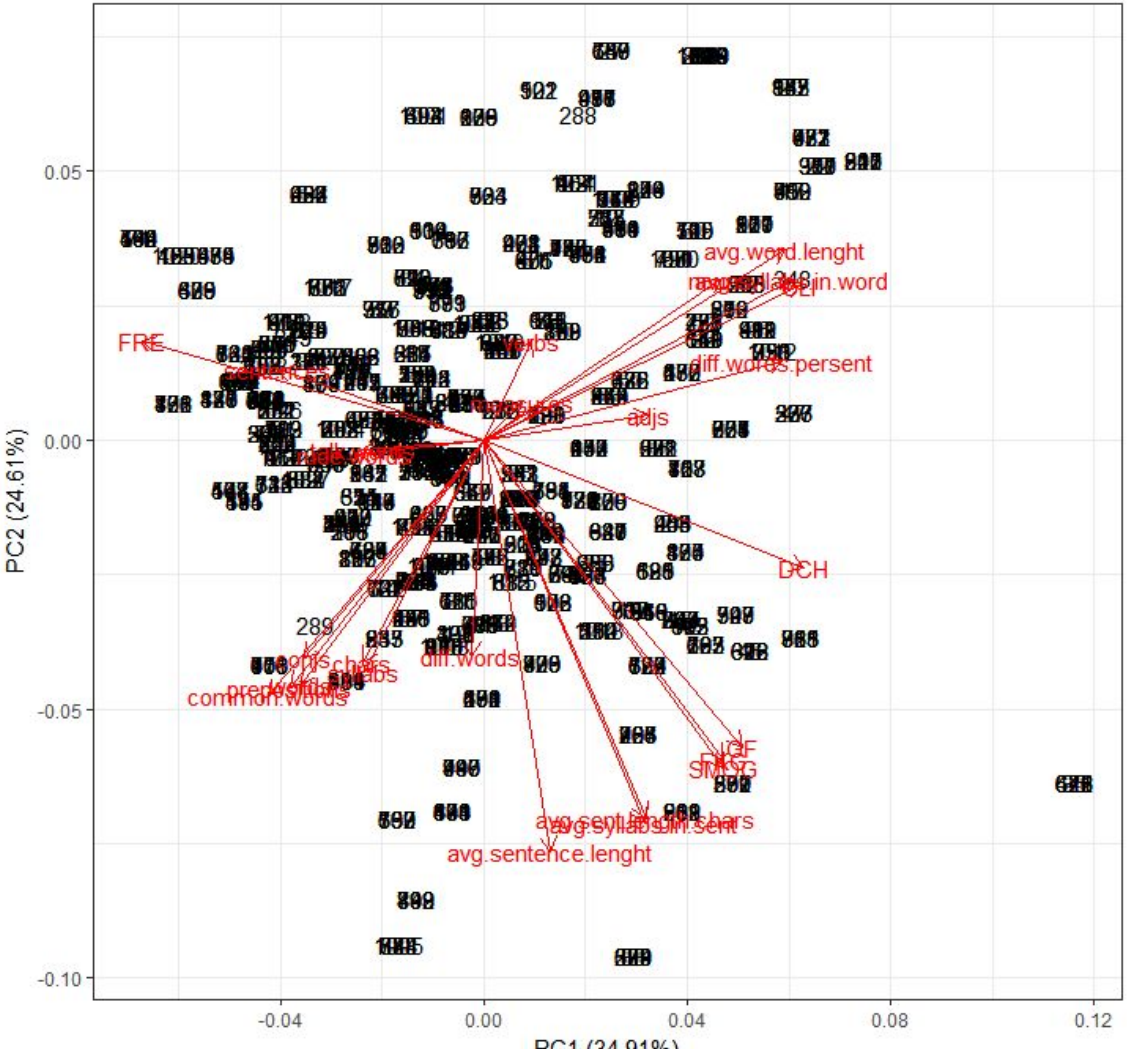
source
cherdak
geektimes
indicator
nplus
politru
postnauka


288
289
avg.word.lenght
diff.words.persent
adjs
DCH
diff.words
common.words
avg.sentence.lenght
PC2 (24.61%)
PC1 (24.91%)
0.05
0.00
-0.05
-0.10
-0.04
0.00
0.04
0.08
0.12