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Linguistic Profiling of VHF Maritime Communication in Northern Adriatic Ports: a Comparative Study of Koper and Rijeka

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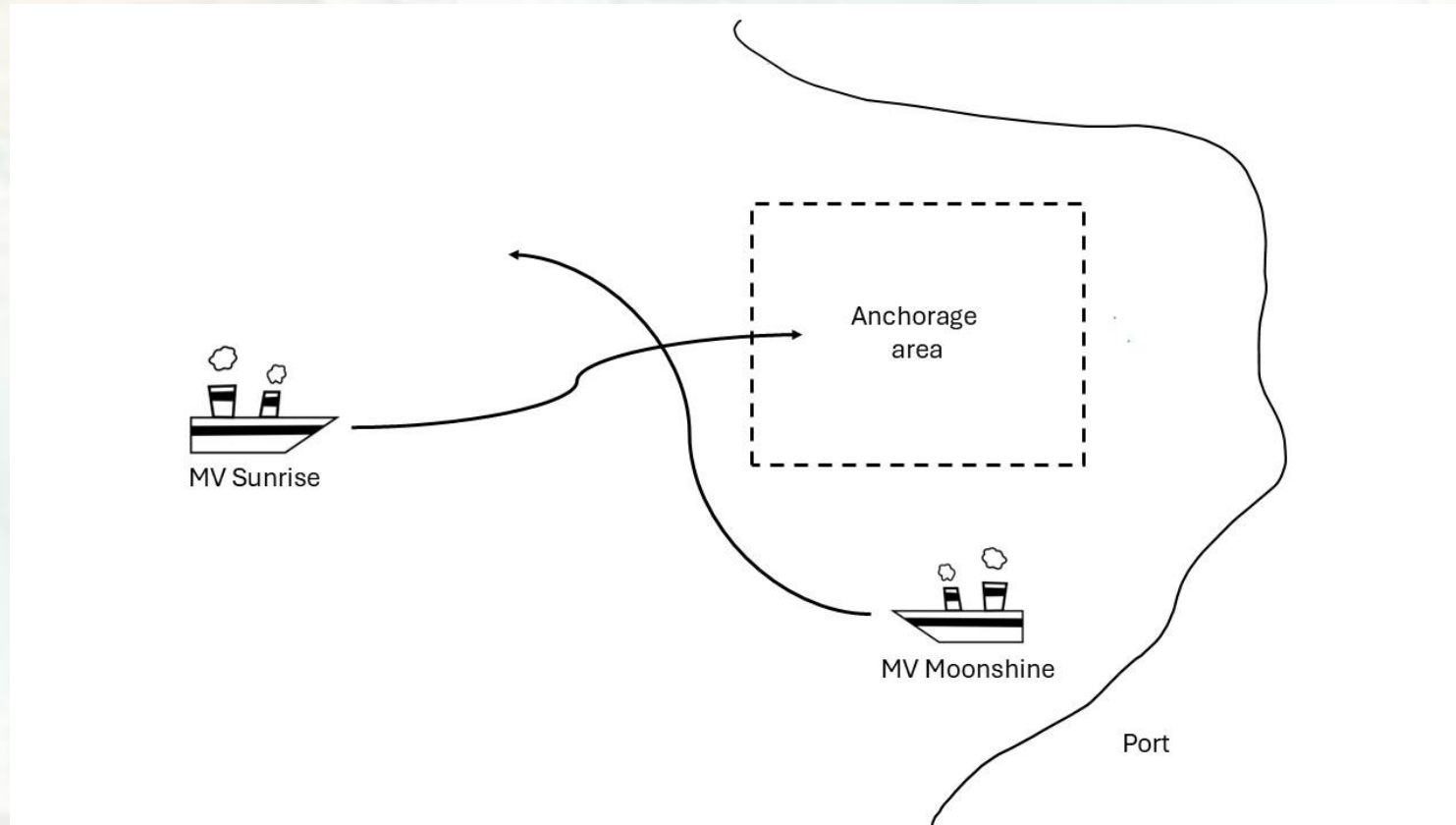
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Linguistic Profiling of VHF Maritime Communication in Northern Adriatic Ports

Background

Shipping accidents may result from ineffective and ambiguous communication, including routine interactions between ships and shore service operators (IALA, 2017; Bocanegra-Valle, 2011; Boström, 2020, 2021).

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Linguistic Profiling of VHF Maritime Communication in Northern Adriatic Ports

My intention, sir, are going to, to drop anchor.



Yes, sir, affirmative, I **want to** cross ahead of you.

Anchorage area



What is your intention? You are going drop anchor?

On this position, correct, you **won't** cross ahead of me?

Copy on that, thank you, back to one six.

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Definition

The main purpose of routine maritime communication is to ensure safe and efficient navigation by promoting communication characterized by (Johnson, 1999):

- simplicity
- clarity
- predictability
- unambiguity

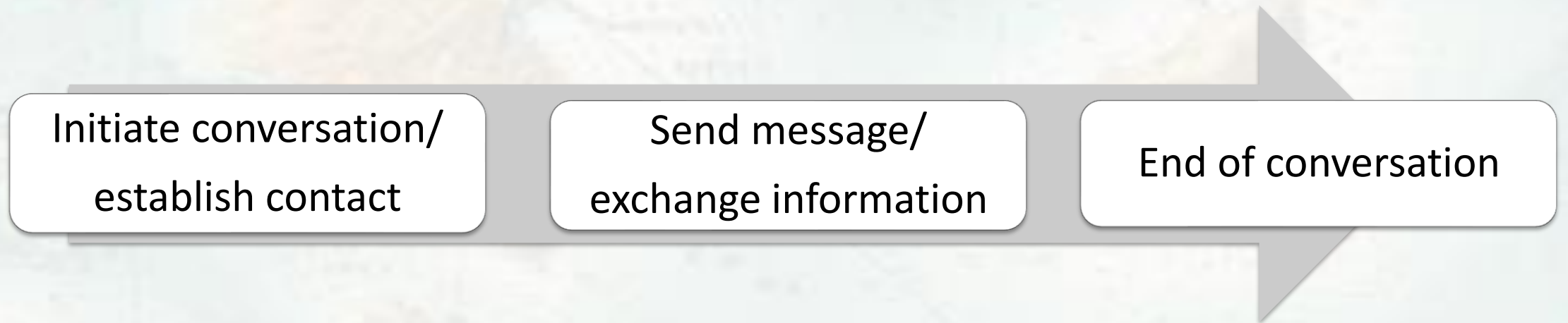
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Definition

Routine ship-shore communication topics in Koper (Jurkovič, 2022):

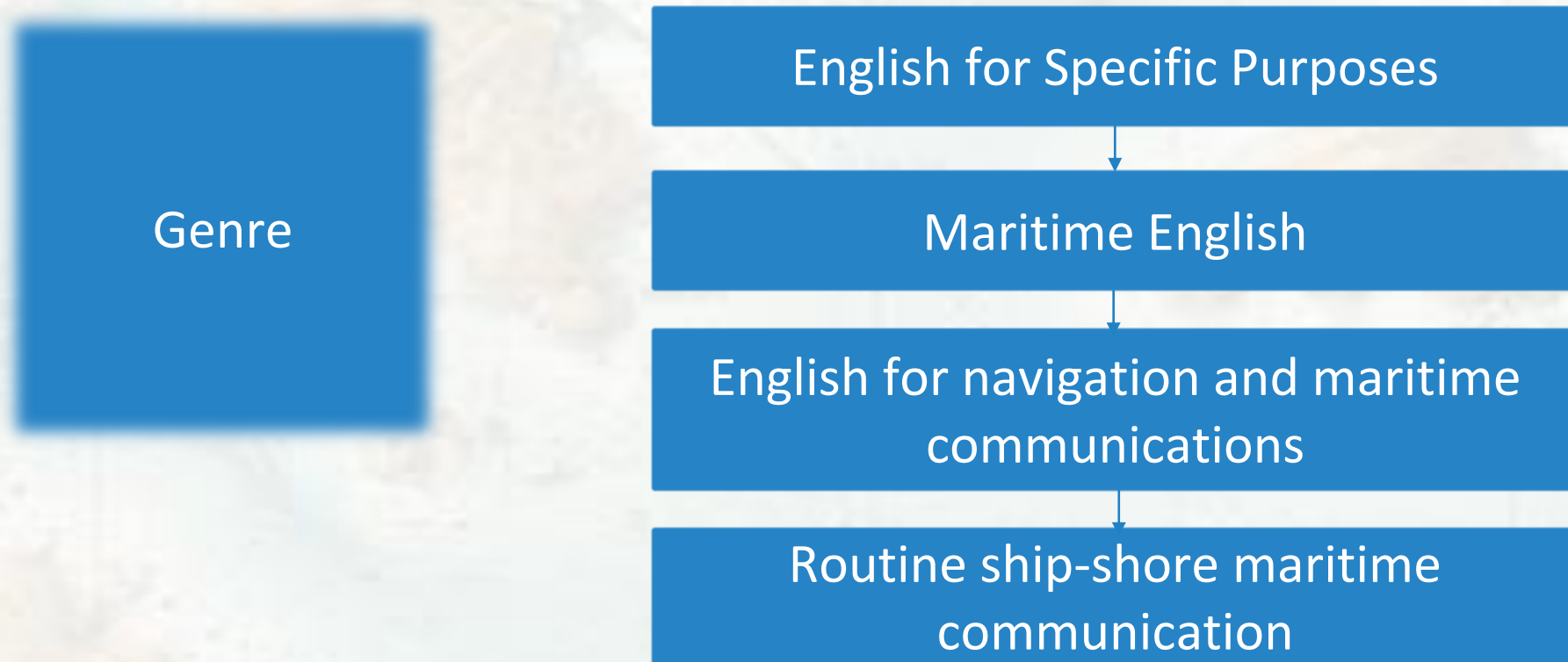
- pilot boarding arrangements
- anchoring
- vessel reporting
- ETA information
- navigation information
- ship drills
- towage
- bunkering
- meteorological conditions
- speed messages

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Bocanegra-Valle (2011)

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See Bocanegra-Valle, 2010; Bocanegra-Valle, 2011; Pritchard & Kalogjera, 2000

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Genre

Genre description (Swales, 2016):

- structure
- prototypicality
- predictability
- simplicity
- frequency
- mode of production
- variability

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Objective

To analyze and describe a corpus of spoken VHF communication recorded in the area of Northern Adriatic, specifically the ports of Koper (Slovenia) and Rijeka (Croatia).



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Objective

To identify characteristic features of the two corpora as well as similarities and differences.



Linguistic Profiling of VHF Maritime Communication in Northern Adriatic Ports

Objective

To provide additional insights into authentic spoken maritime communication, which in turn may have implications for maritime education and training of future seafarers as well as Harbour Master officers and VTS operators.



Methodology

Corpus-based analysis – Sketch Engine:

- Frequencies
- Verbs
- Keyterms
- N-grams

Statistical analysis (topic modelling)

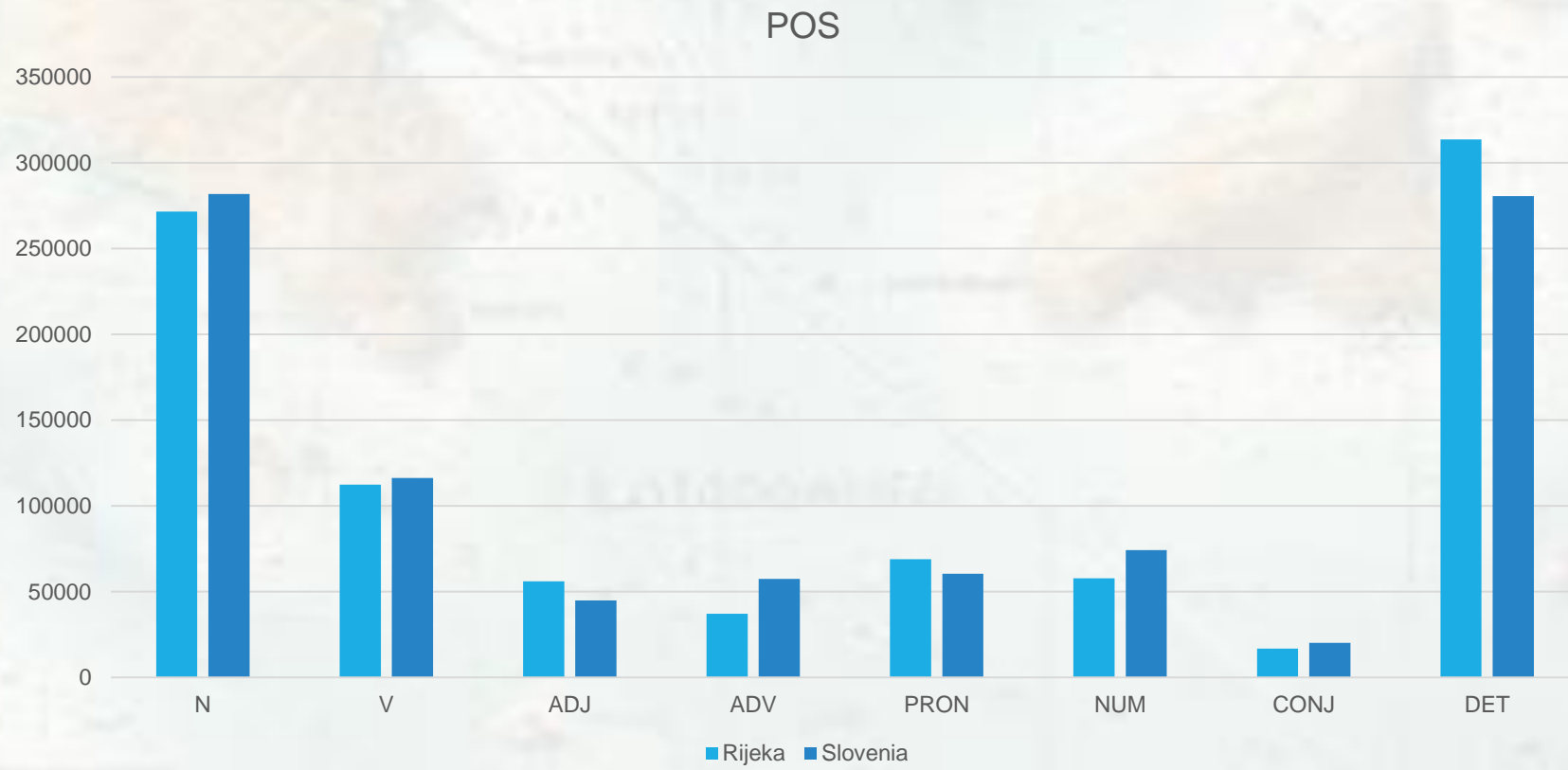
- Python (NLTK)

Results (general)

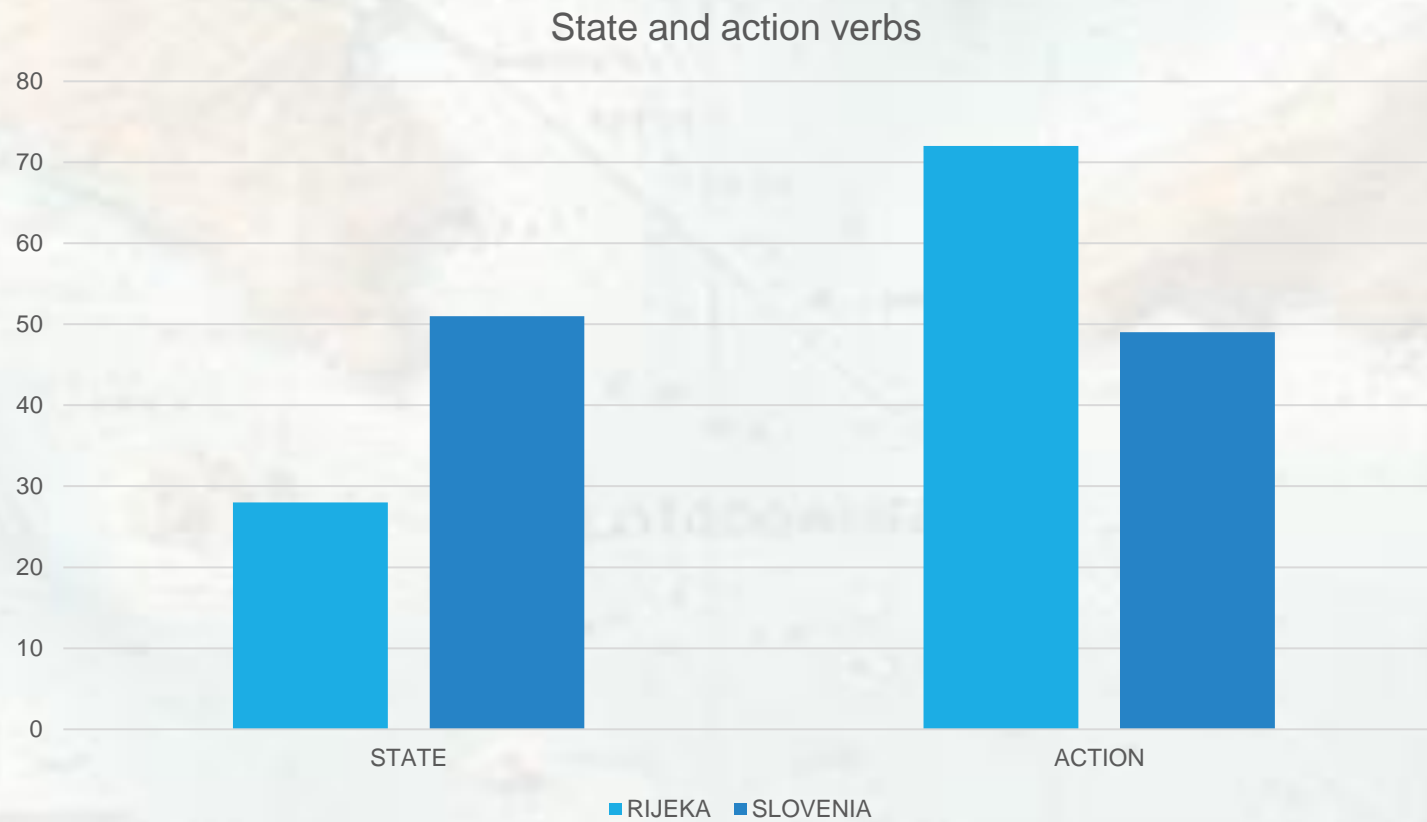
	VTS RIJEKA	VTS SLOVENIA
Tokens	21465	7221
Words	16126	5654
Sentences	3278	982
TTR	75,12	78,3
STTR	54	60

Readability	VTS RK	VTS SLO
Flesch-Kincaid Reading Ease	83,2	72
SMOG	6,3	7

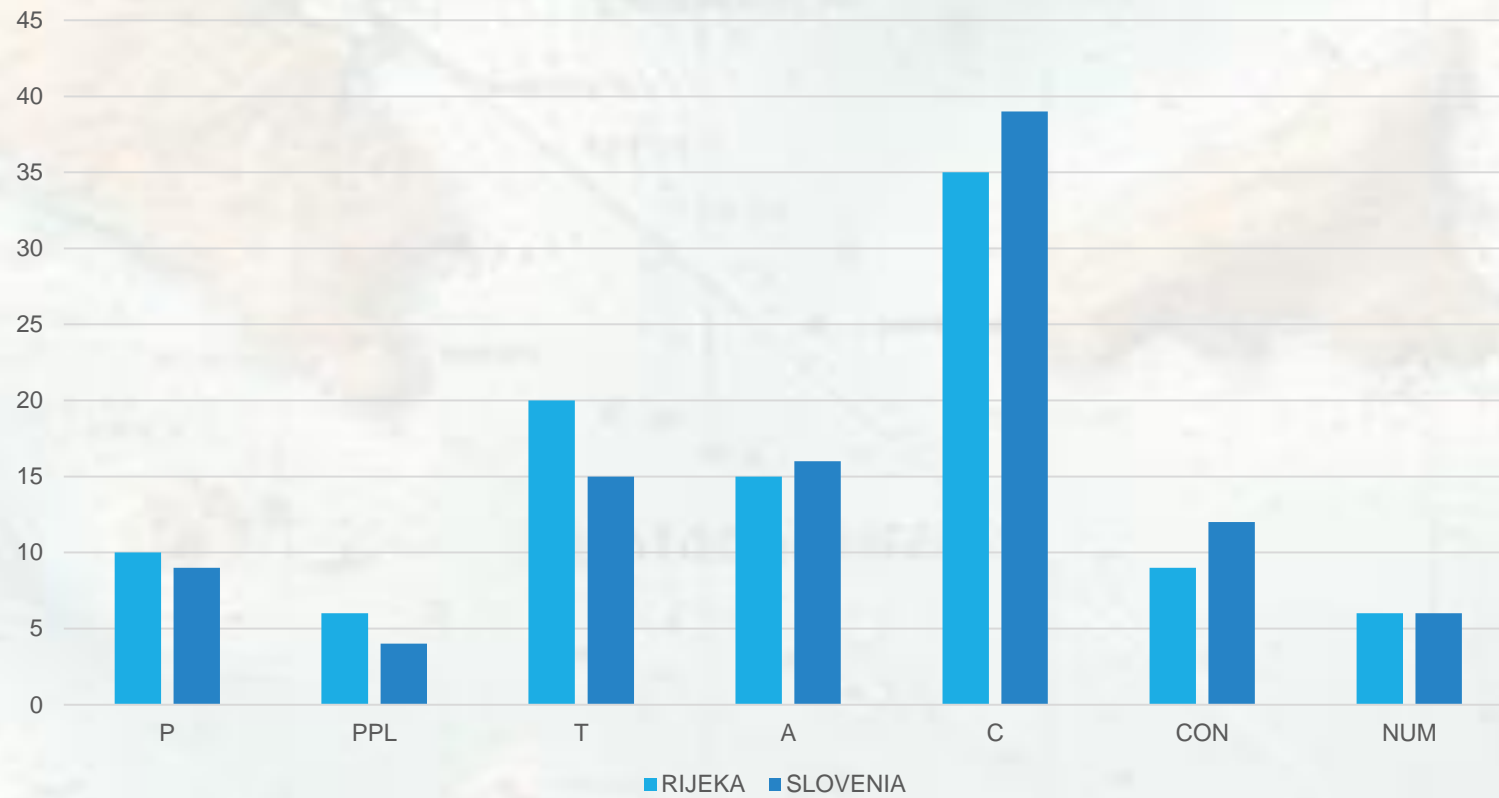
Results – POS



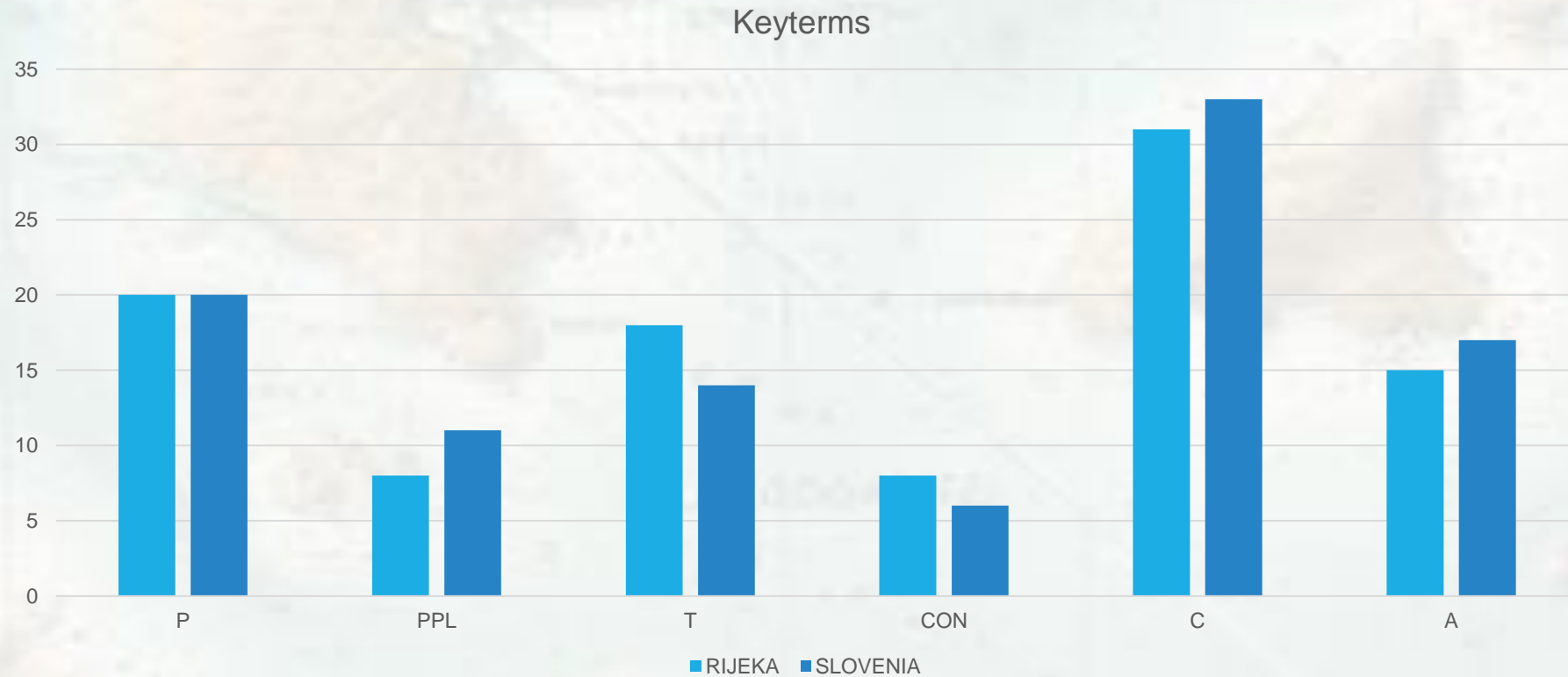
Results – verbs



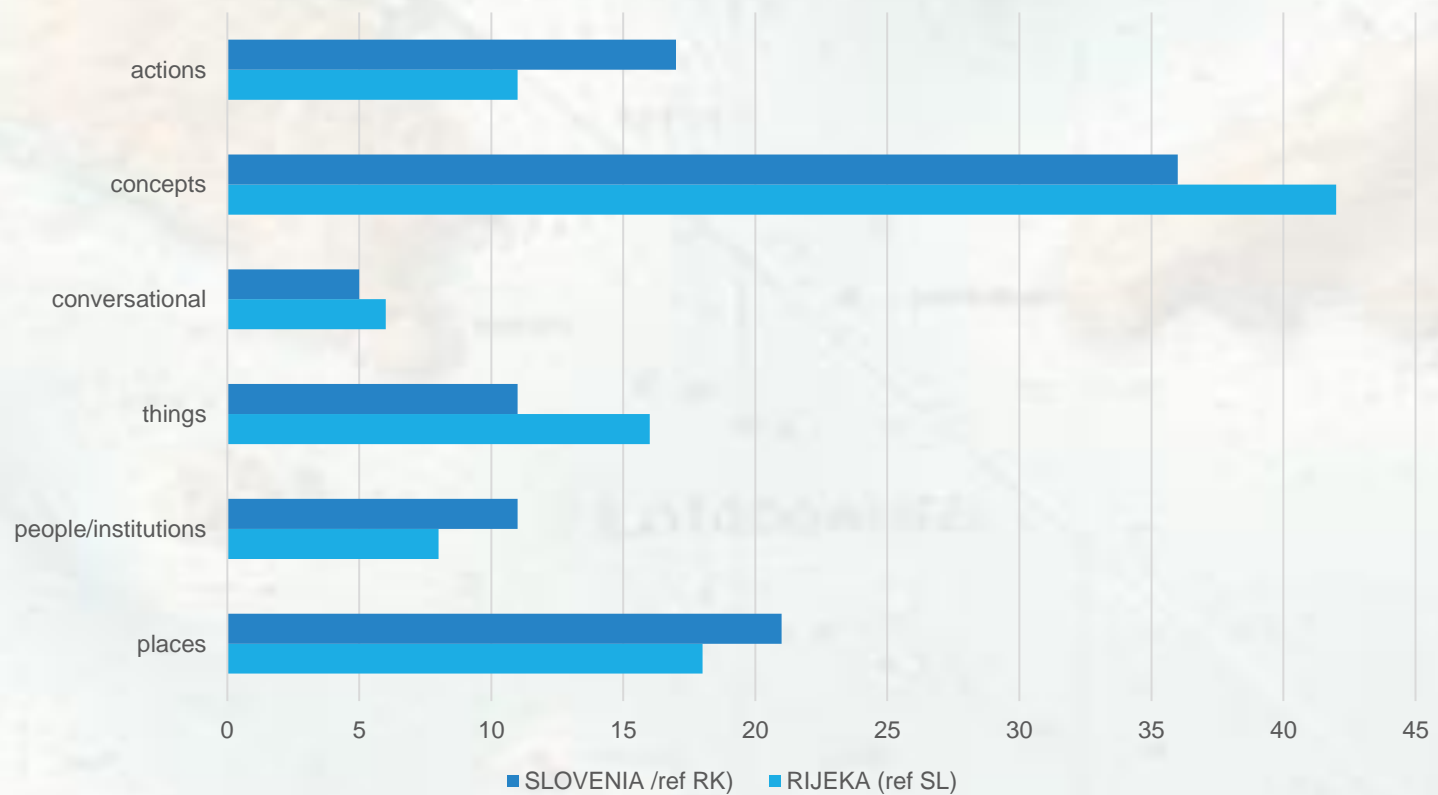
Results – keywords



Results – keyterms



Results – keyterms (refRK, refSLO)



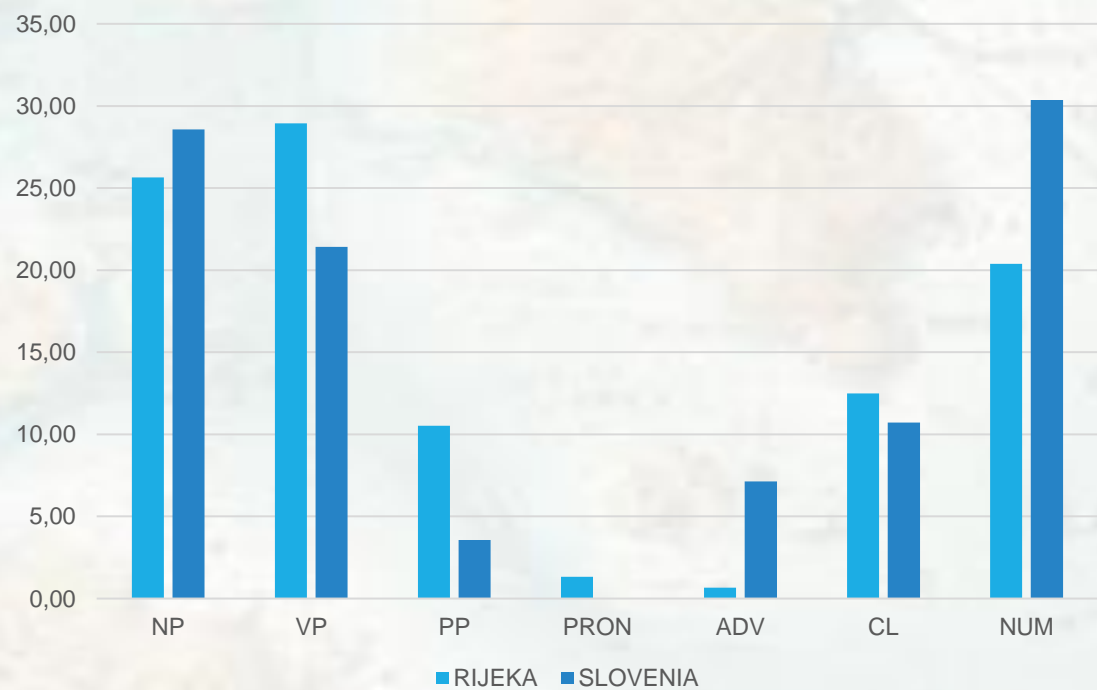
Results – keyterms (refRK, refSLO)

SLOVENIA	TOPICS						
	SHIPS	PORT	SPEED	PEOPLE	ANCHORING	BERTHING	PILOTING
	motor vessel	tugservice	ship speed	cityharbour master	anchoringtime	berthingprospects	citypilot
	tanker planet	cityport	increasing speed	citymrcc	anchorage position	berthinginformation	pilot on the channel
	main engine	port limit line	speed in port limits	harbour master's office	new anchorage		citypilot station
	engine operation	port area	allowed speed		anchoring point		pilot's instructions boarding
		crossing port limit	maximum speed in port				arrangements
		limit area	speed regulation				boarding details
		separation zone					
		fairway buoy					
		port clearance					

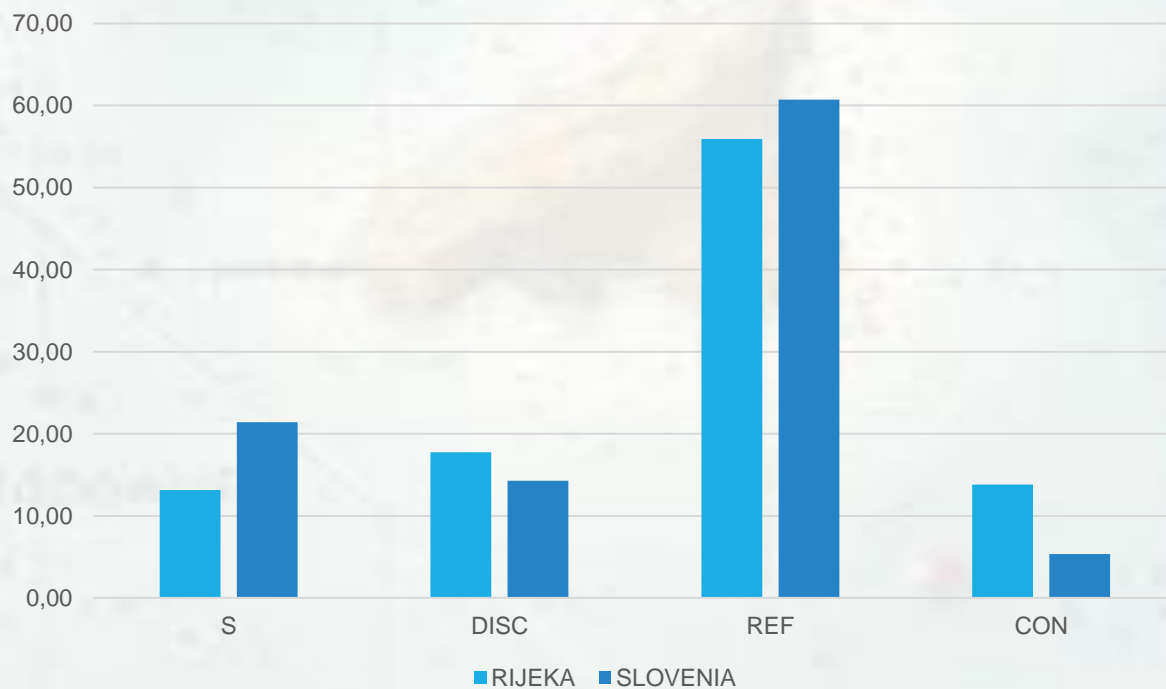
RIJEKA	PORT	PEOPLE	BUNKERS	CARGO	SHIP INFO	ANCORING	TRAFFIC
	container terminal	vts station	diesel oil	imo class	total persons on bord	charlie anchorage	territorial waters
	customs dock	name traffic	fuel oil	dg cargo	last port of call	anchor position	sector delta
			lube oil	cargo quantity	total crew		routing sector
			bunker figure	total quantity	destination port		other traffic
			bunker condition	dangerous cargo quantity	maximum draft		sea trials
			metric ton		call sign		navigational status
			oil quantity		passage plan		traffic separation
					starboard side		
					tanker vessel		
					recreational boat		
					cruise ship		
					maximum draft on arrival		

Results – n-grams

Grammatical bundles



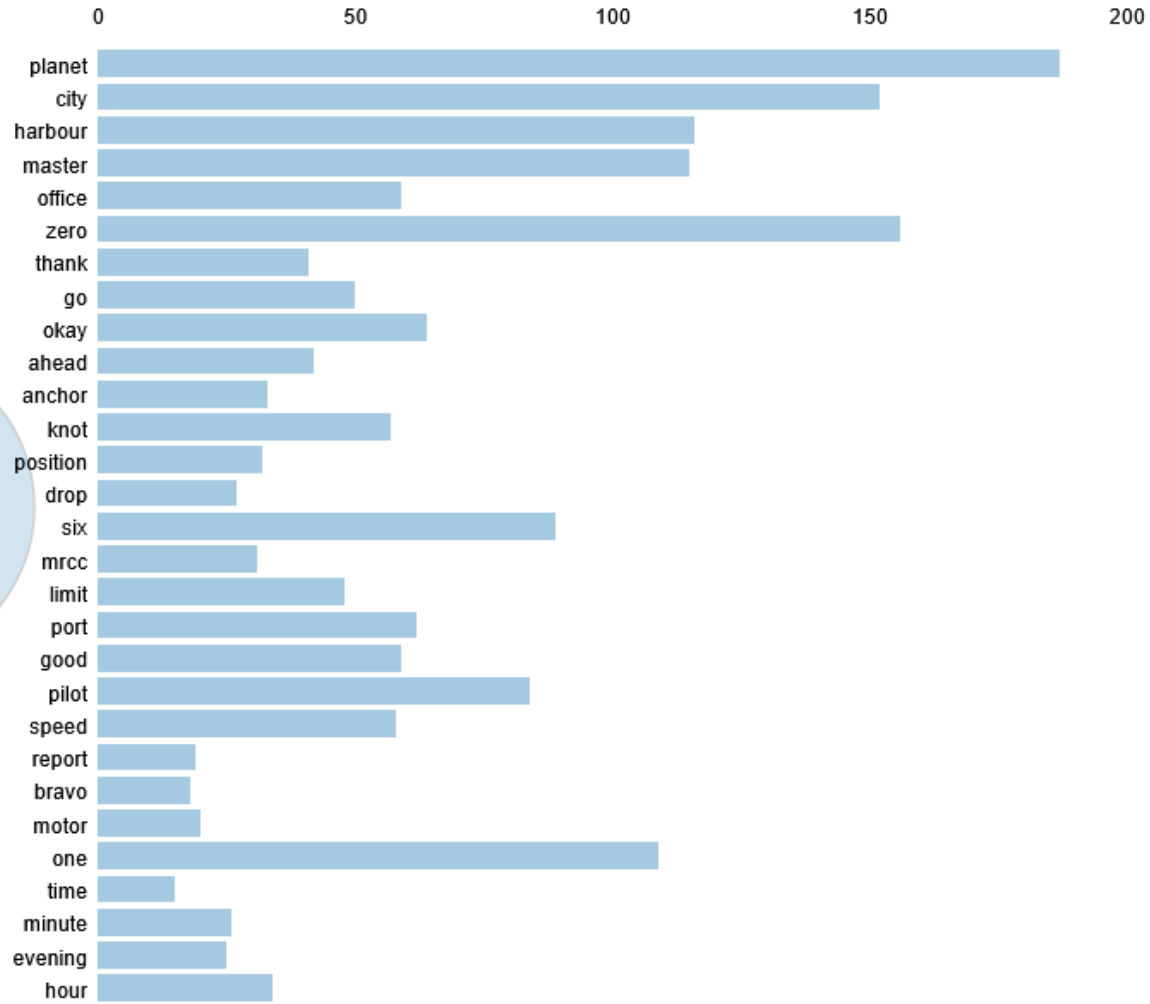
Functional bundles



Results – Python

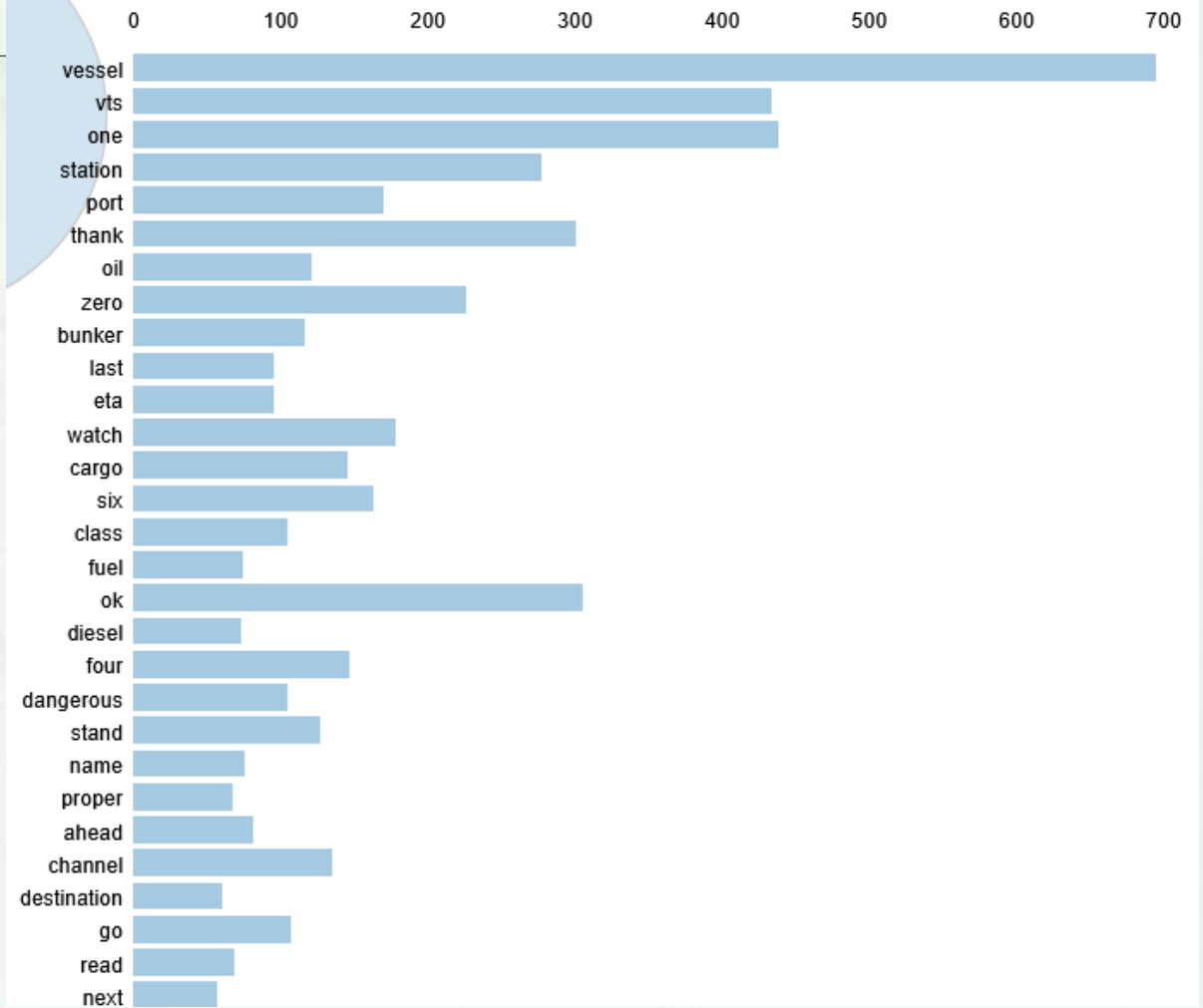
Corpus VTS Slovenia

Top-30 Most Salient Terms¹

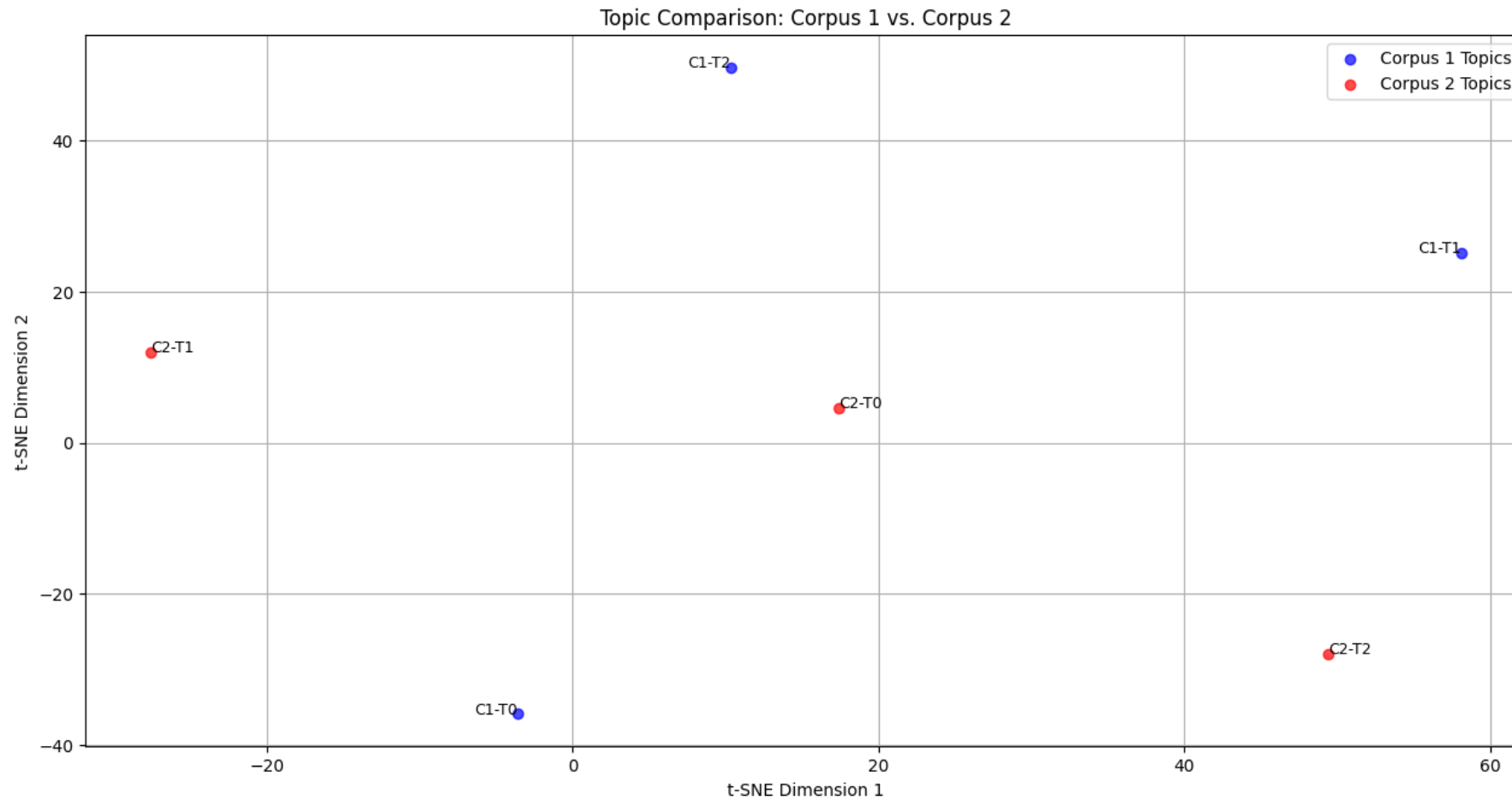


Corpus VTS Rijeka

Top-30 Most Salient Terms¹



Results – Python



References

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Thank you for your attention!

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