A Comparative Analysis of European City Police Presence on Twitter

Master Thesis Defense

Shasha Jiang

Supervised by

Prof. Daniel Gatica-Perez

Ravinithesh Annapureddy

Try Pitch

OUTLINE

Try Pitch

Research Questions:

RQ1: What characterizes the **Twitter usage practices** of European city police departments, and how do these practices differ among cities in various countries?

RQ2: Are there identifiable **patterns** or differences in how city police departments and city residents tweet about **police-related matters** across different European cities?

Try Pitch

1

Social Media in Policing

- **General dynamics of police Twitter usage**

"What Are the Police Doing on Twitter? Social Media, the Police and the Public"
"Twitter for city police department information sharing "

- **Data analysis and visualisation**

"Analyzing and Visualizing Government-Citizen Interactions on Twitter to Support Public Policy-Making"
"Examining Government-Citizen Interactions on Twitter Using Visual and Sentiment Analysis"

- **Relationship between police action and public sentiment and engagement**

" Measuring Police Performance: Public Attitudes Expressed in Twitter"
"To Serve and to Tweet: An Examination of Police-Related Twitter Activity in Toronto"
"The police on Twitter: image management, community build- ing, and implications for policing in Canada"
"Examining Negative Online Social Reaction to Police Use of Force: The George Floyd and Jacob Blake Events"

- **Specific aspects of police work on social media**

"#Missing to #Found: Exploring police Twitter use for missing persons investigations"
"Improving Police Social Media Use Practices"

- **Facebook**

"Examining Police Agencies' Dialogic Accounting Practices in Facebook Conversations"
"Working with communities on social media Varieties in the use of Facebook and Twitter by local police"

2

Twitter in European Policing

- **Sweden**

"The Use of Twitter by Police Officers in Urban and Rural Contexts in Sweden"

- **Netherland**

"Police message diffusion on Twitter: analysing the reach of social media communications"

- **Germany**

"Do organizational differences matter for the use of social media by public organizations? A computational analysis of the way the German police use Twitter for external communication"
"The role of emotions for citizen engagement via social media – A study of police departments using twitter"

- **UK**

"Social Media and the Police: Tweeting Practices of British Police Forces during the August 2011 Riots"
"An Analysis of UK Policing En- gagement via Social Media"

- **Cross countries**

"Machine Translation, Sentiment Analysis, Text Similarity, Topic Modelling, and Tweets: Understanding Social Media Usage Among Police and Gendarmerie Organizations"
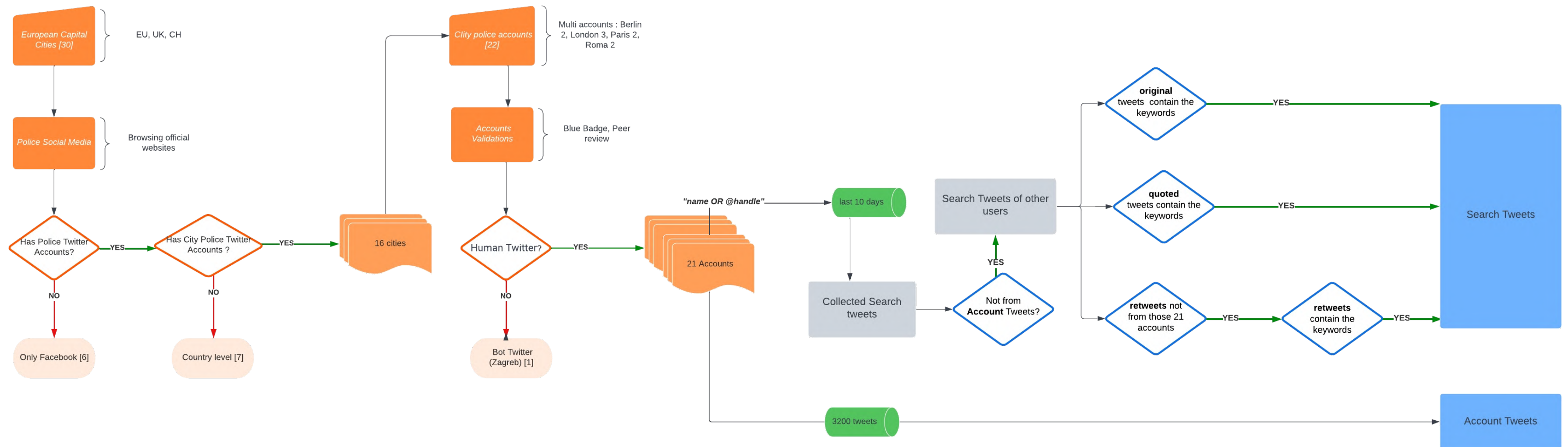
DATA COLLECTING - COLLECTING PROCESS

INCLUSION CIRTERIUM

EU capitial cities UK Switzerland

COLLECTED TWEETS

Account tweets + Search tweets

Try Pitch

3

SELECTED ACCOUNTS

City	Account Name	Handle
Amsterdam	Politie Eenheid Amsterdam	@POL_Amsterdam
Berlin-1	Polizei Berlin Einsatz	@PolizeiBerlin_E
Berlin-2	Polizei Berlin	@polizeiberlin
Bern	Kantonspolizei Bern	@PoliceBern [a]
Copenhagen	Københavns Politi	@KobenhavnPoliti
Helsinki	Helsingin poliisi	@HelsinkiPoliisi
Lisbon	Comando Metropolitano de Lisboa	@psplisboa @PSPCOMETLIS [b]
London-1	City of London Police	@CityPolice
London-2	Metropolitan Police	@metpoliceuk
London-3	Met Contact Centre	@MetCC
Madrid	Policía Municipal de Madrid	@policiademadrid
Oslo	OPS Politiet Oslo	@oslopolitiops
Paris-1	Police Municipale de Paris	@PMdeParis
Paris-2	Préfecture de Police	@prefpolice
Prague	Městská policie Praha	@MP_Praha
Riga	Rīgas pašvaldības policija	@RigasPP
Rome-1	Polizia Roma Capitale	@PLRomaCapitale
Rome-2	Questura Di Roma	@QuesturaDiRoma
Stockholm	Polisen Stockholm	@polisen_sthlm
Vienna	POLIZEI WIEN	@LPDWien
Warsaw	Policja Warszawa	@Policja_KSP
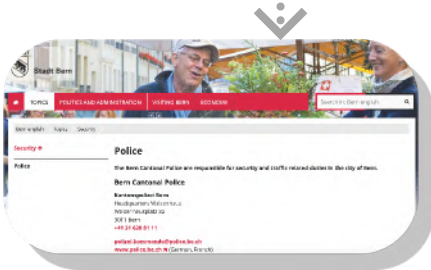
ACCOUNTS BIOGRAPHY

Report Crime Info

Politie Eenheid Amsterdam
@POL_Amsterdam
Politie Eenheid Amsterdam | Omgeving Amsterdam, Amstelveen, Diemen, Uithoorn | Voor het melden van incidenten belt u 0900-8844. Bij spoed belt u 112.
Translated from Dutch by Google
Police Unit Amsterdam | Area Amsterdam, Amstelveen, Diemen, Uithoorn | To report incidents, call 0900-8844. In case of emergency, call 112.

Københavns Politi
@KobenhavnPoliti
Vi kan ikke garantere svar her. Find svar på politi.dk eller ring 114. Akut hjælp: ring 112. Web-anmeld: politi.dk/anmeld. Vi bruger #politidk

Helsingin poliisi
@HelsinkiPoliisi
Helsingin poliisin virallinen Twitter-tili | Polisen i Helsingfors officiella Twitterkonto | The Official Twitter account of Helsinki Police.

Emergencies Info

City of London Police
@CityPolice
We are the police force for the City of London 'Square Mile'. Please don't report crime here; call 101 or 999 in an emergency. Not monitored 24/7.

Metropolitan Police
@metpoliceuk
London's Metropolitan Police Service. Please do not report crime here. Call 101, tweet @MetCC or visit our website. In an emergency always call 999
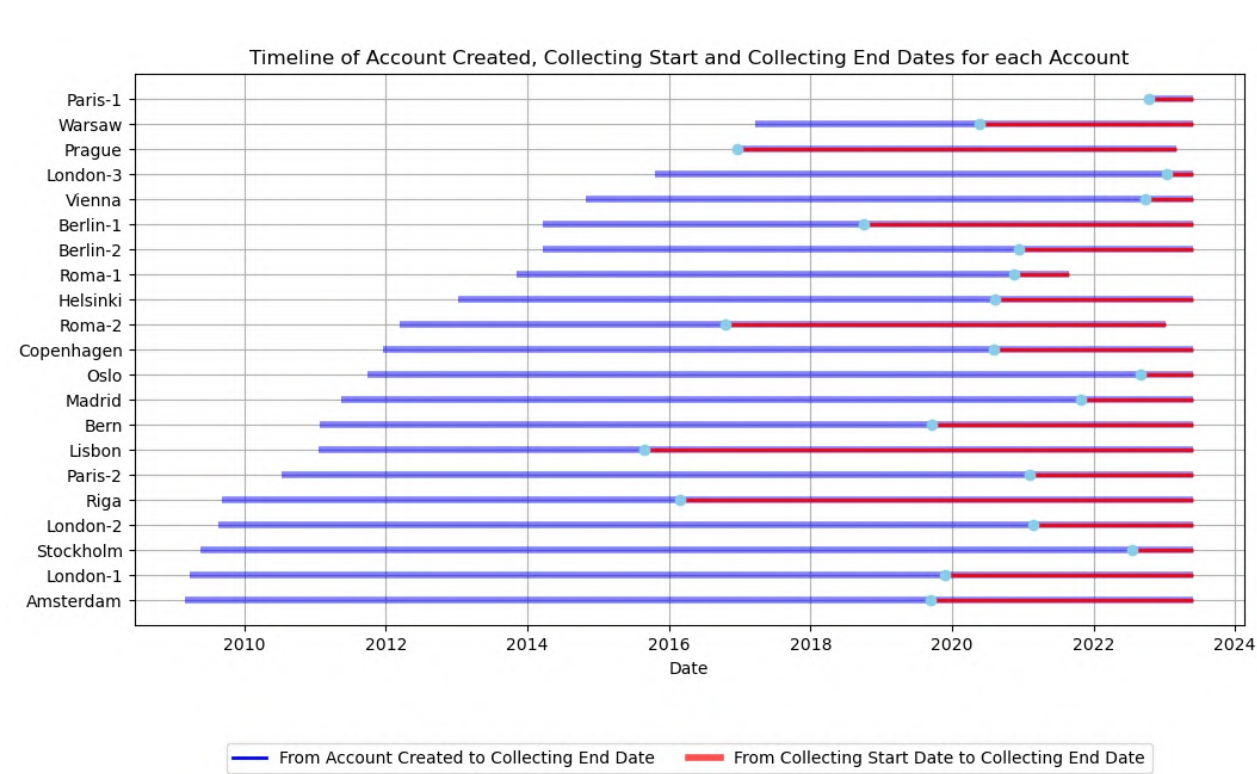
Met Contact Centre
@MetCC
London's Metropolitan Police Service Contact Centre (MetCC). We are available for non-emergency enquiries 24/7/365. In an emergency, always dial 999.
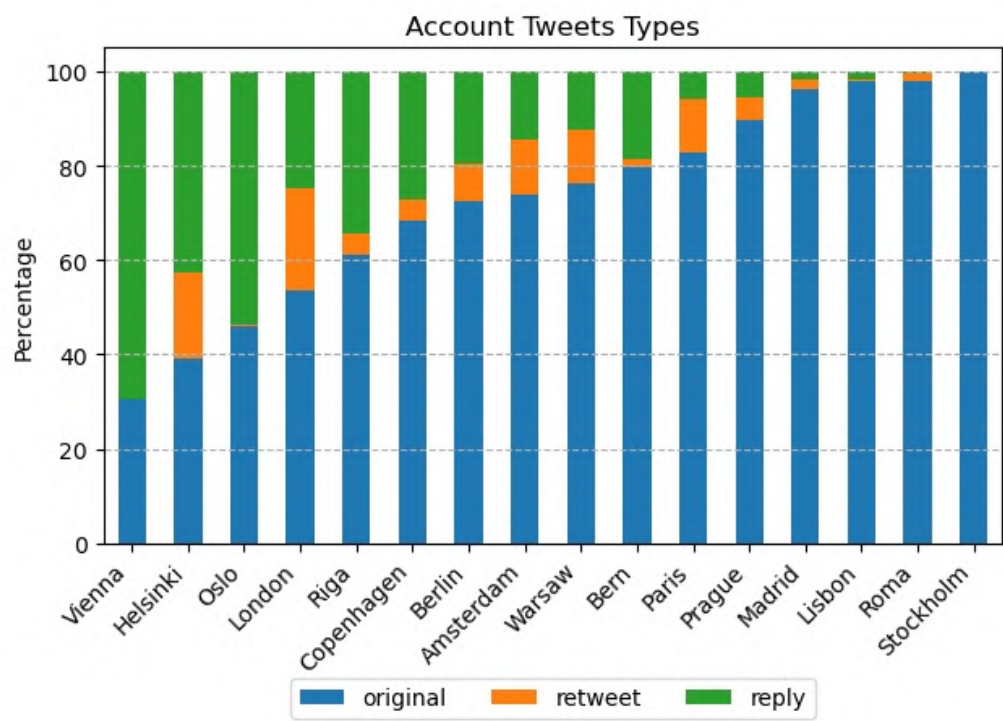
4

DATA COLLECTING - DATA TOPOLOGY

Timeline of Account Created, Collecting Start and Collecting End Dates for each Account

From Account Created to Collecting End Date · From Collecting Start Date to Collecting End Date

Account Tweets Types

original · retweet · reply

Scatter plot of city population and account followers with collected search tweets size

ACCOUNTS TIMELINE

68,670 account tweets with an average of 3,270 tweets per account

ACCOUNT TWEETS TYPES

- Original: user themselves creates
- Retweets: shared by the user that were originally tweeted by another user
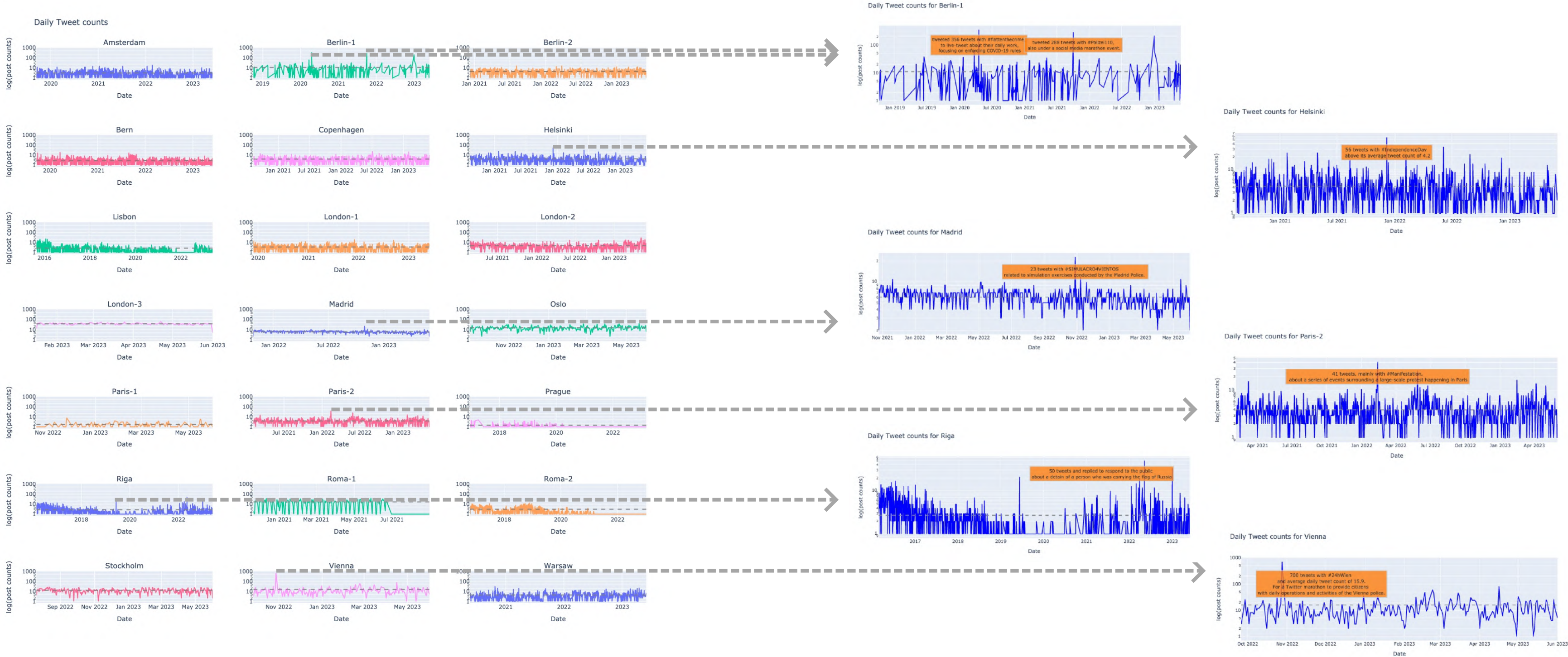- Reply: directly respond to another user
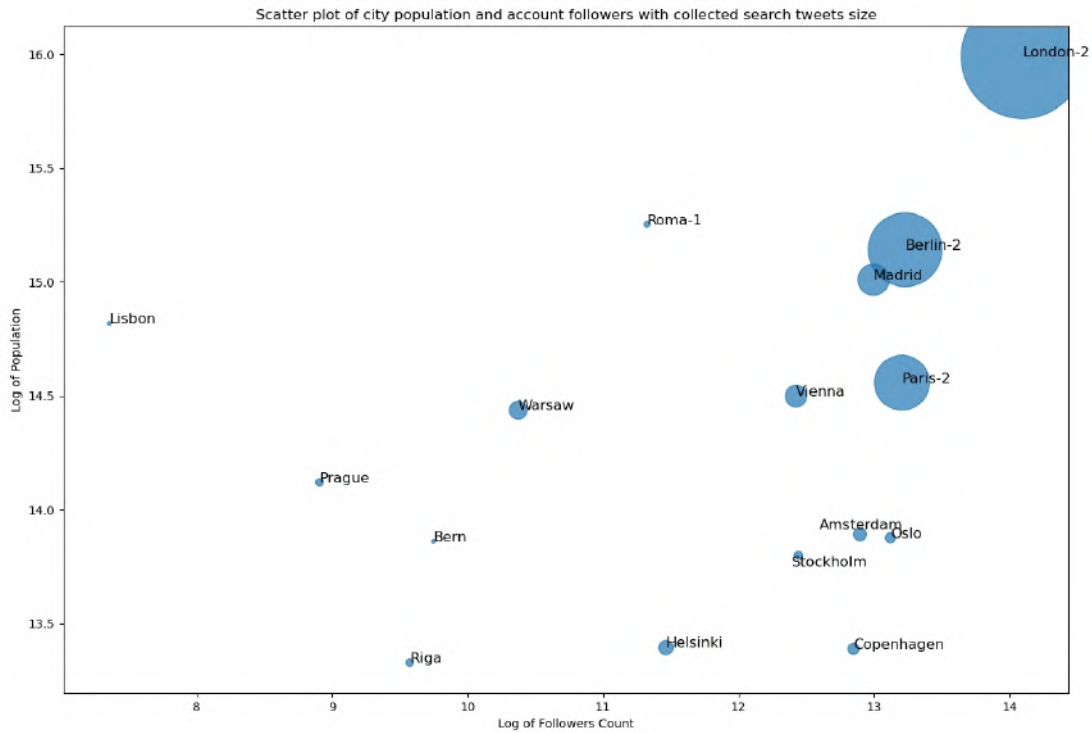
POPULATION FOLLOWERS WITH COLLECTED SEARCH TWEETS

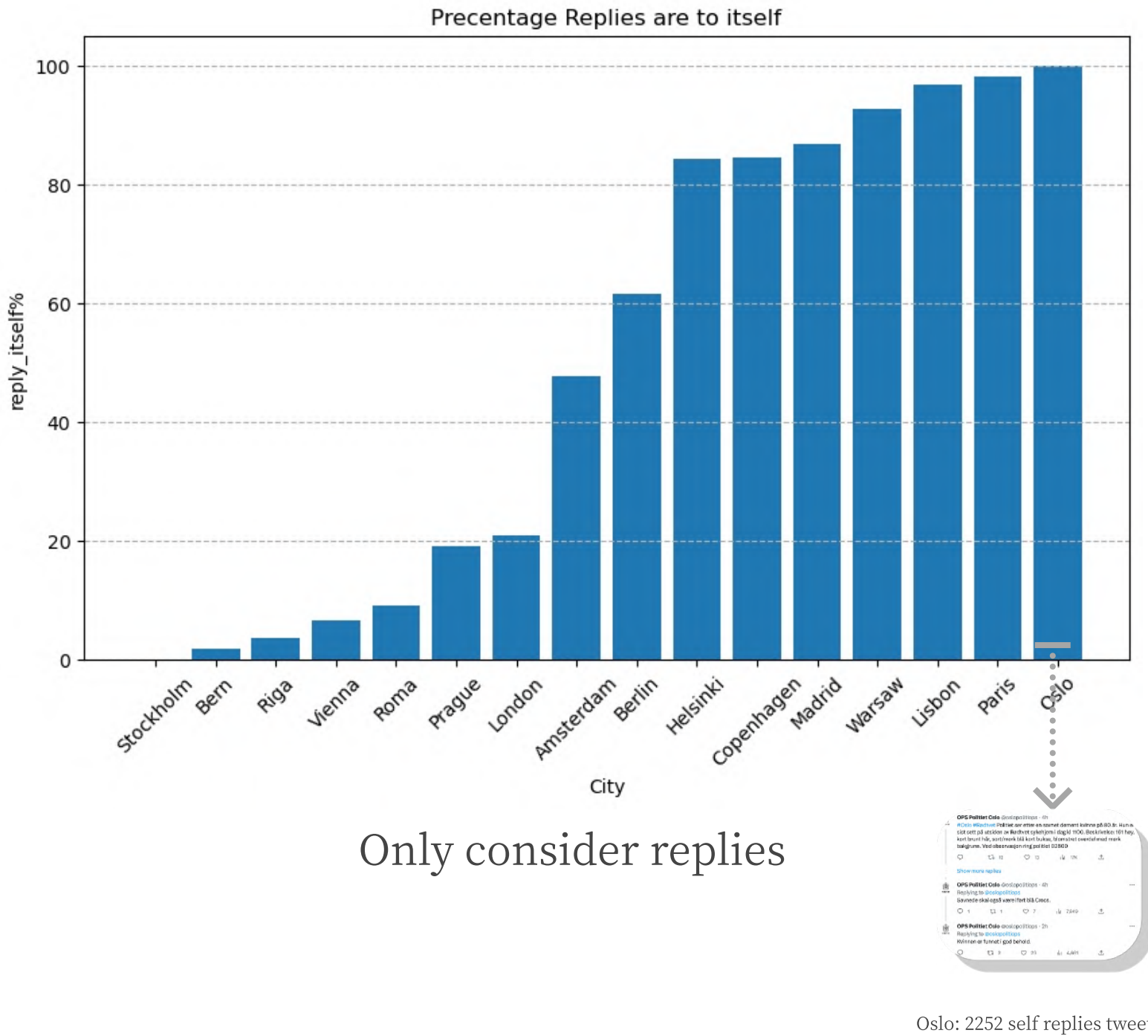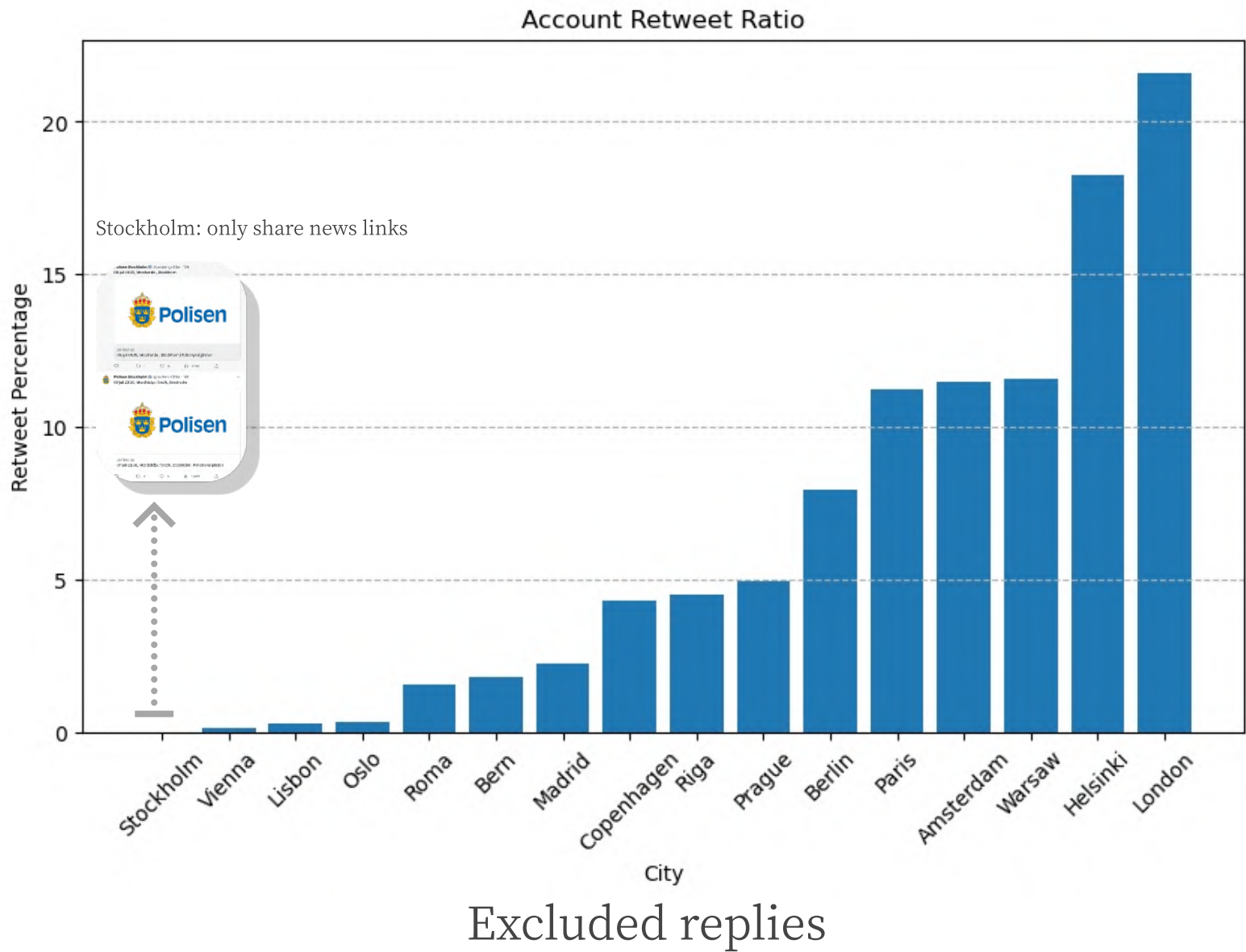365,932 Search Tweets for April and May of 2023

Try Pitch

DAILY TWEETS

Account Retweet Ratio

Excluded replies

Stockholm: only share news links

Retweeted and Mentioned Accounts

Precentage Replies are to itself

Only consider replies

Oslo: 2252 self replies tweets

URL% and Media% of Original Account Tweets

URL links

Try Pitch

Percentage of resource type among Orginal Tweets

Percentage Retweets and Likes Counts based on Resource Sharing

English Account Tweets Topics

English Search Tweets Topics

Try Pitch

Percentage tweets using hashtags

Vocabulary size of Used Hashtags in Account and Search Tweets
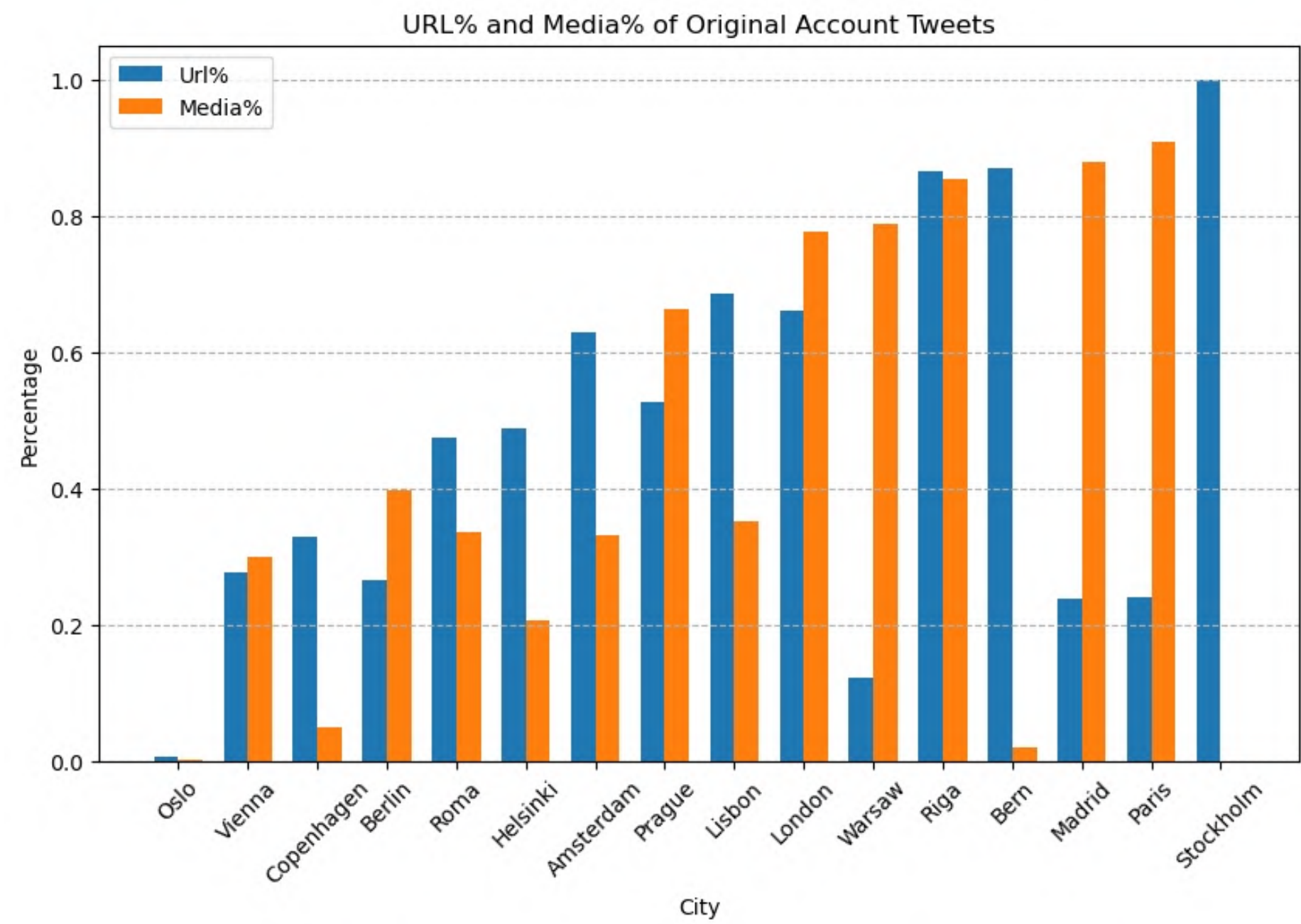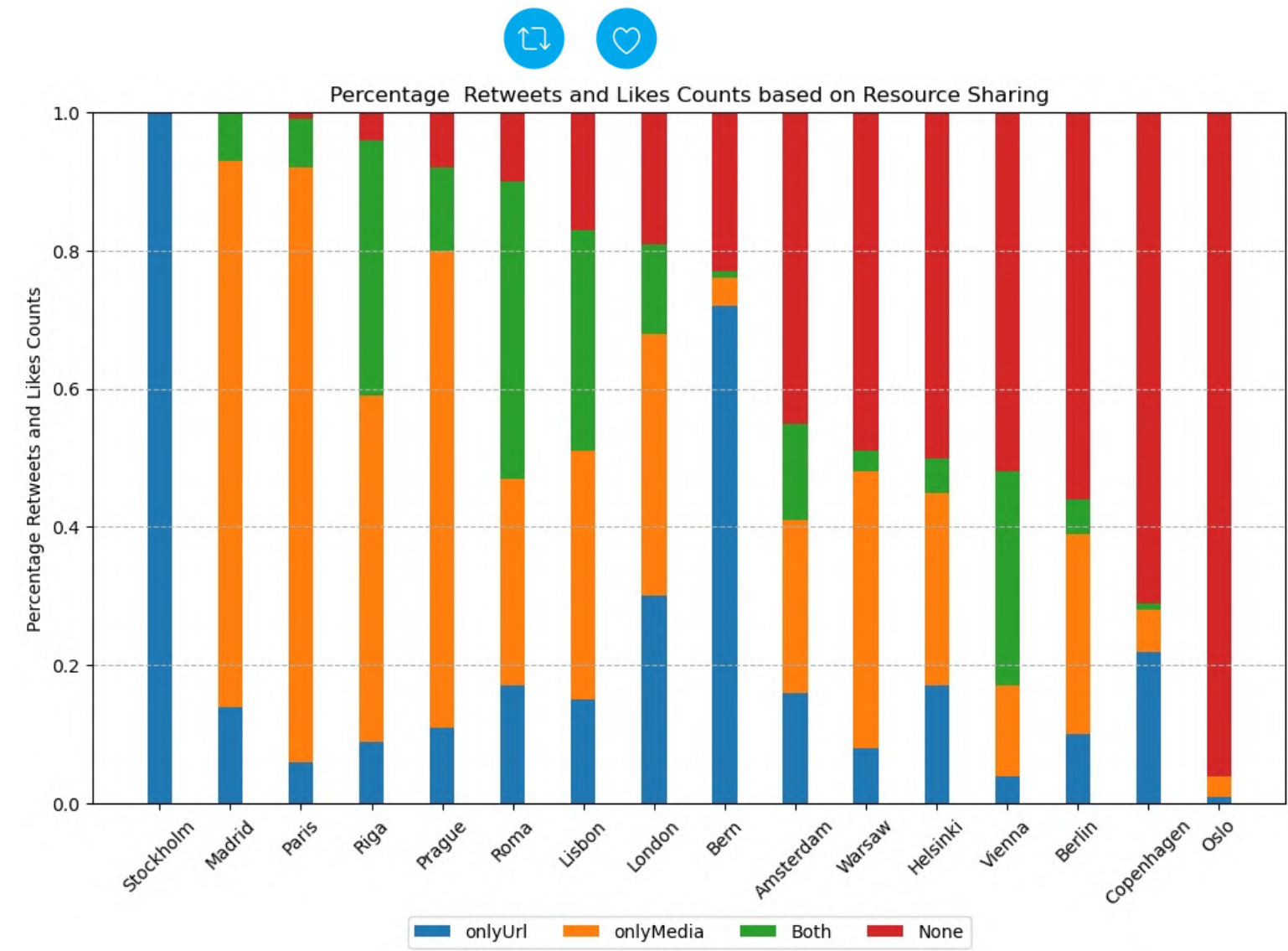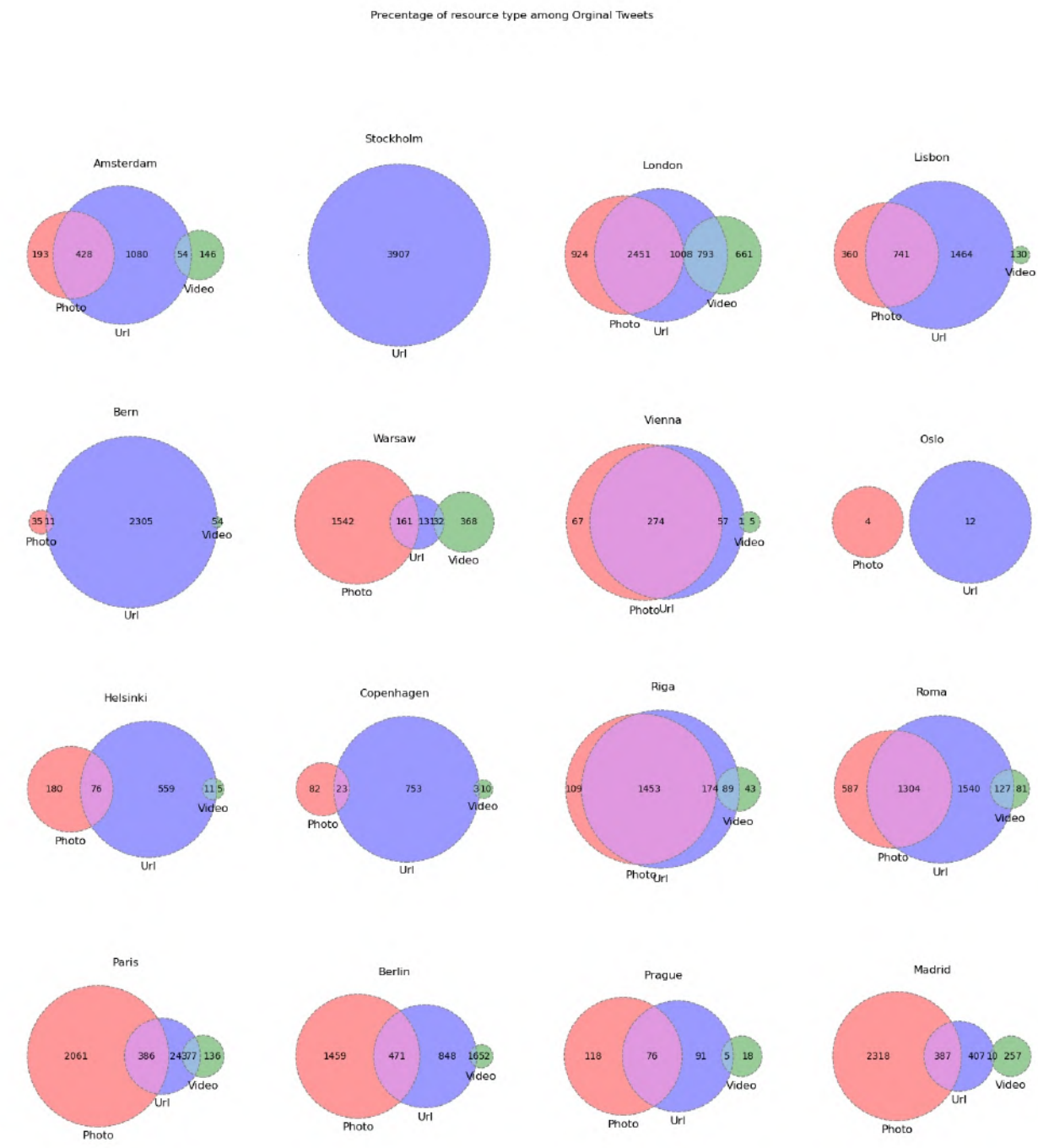
ACCOUNT AND SEARCH TWEETS ANALYSIS - HASHTAGS

ACCOUNT

SEARCH

Try Pitch

TOPICS IN ACCOUNT AND SEARCH TWEETS
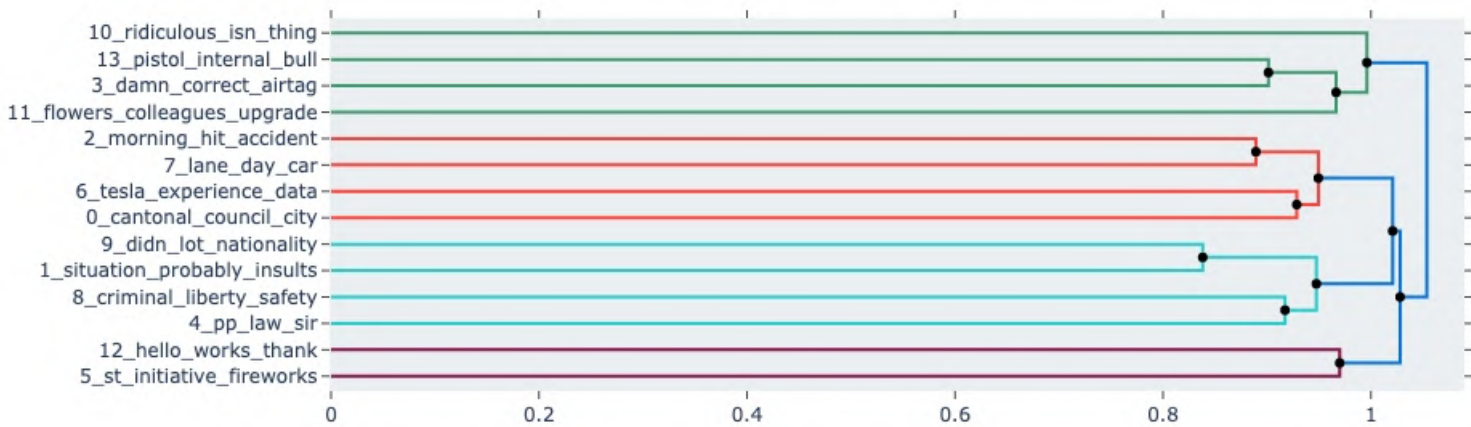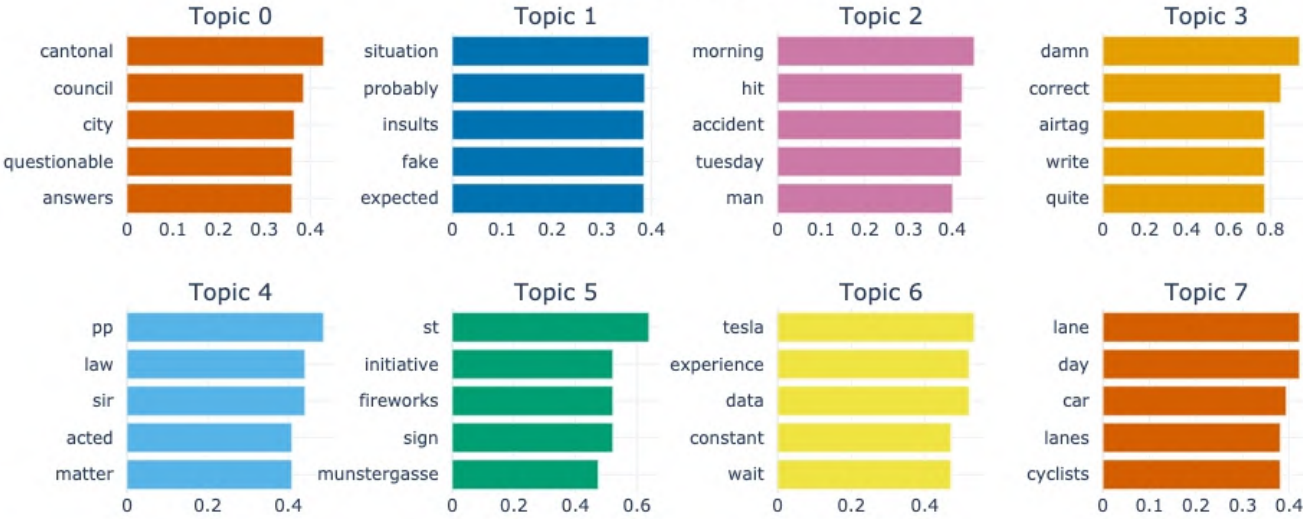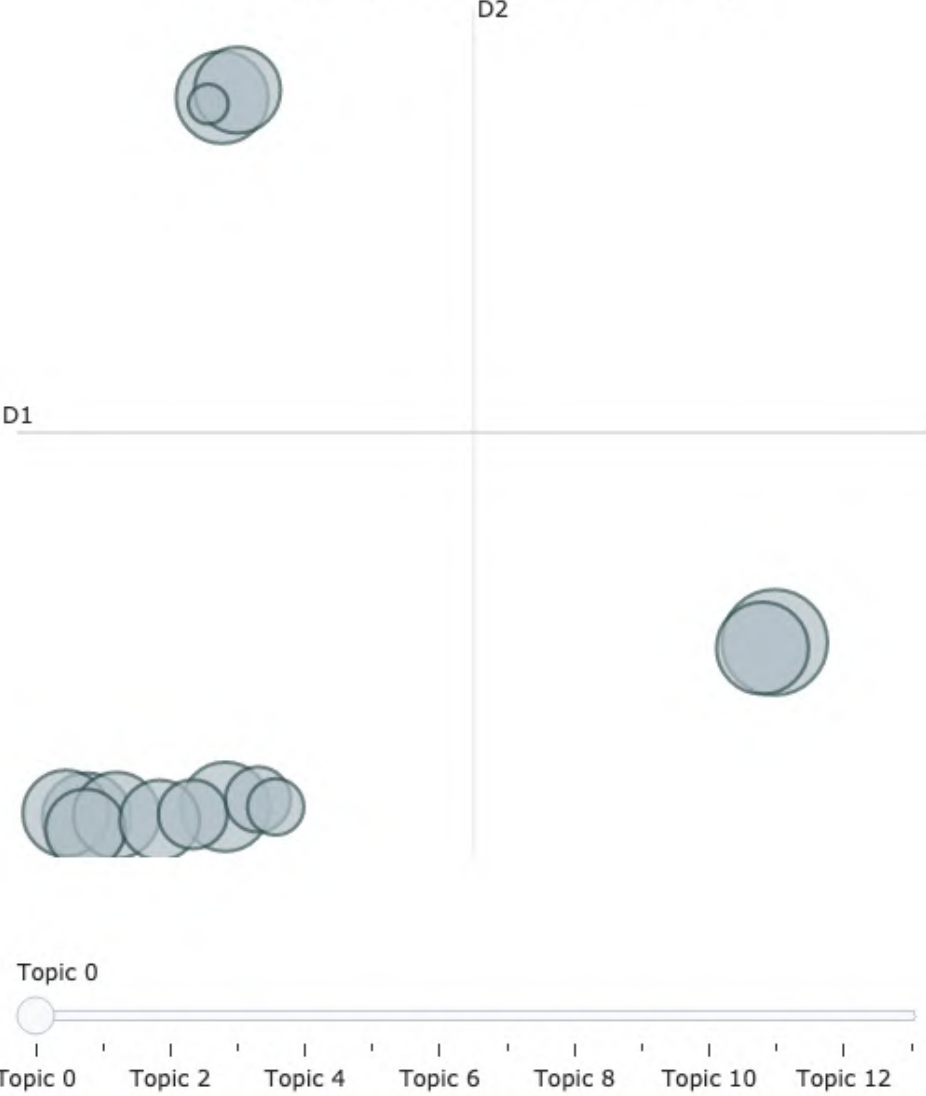
Insights into Police Work

Emergency Reporting Guidelines

Police action and response

Aid and support

Making arrests and investigating on crimes

Public Safety and security measurements

Seek public assistance

Calls for witnesses

Reports on misbehavior and crime

Traffic Management and Driving Control
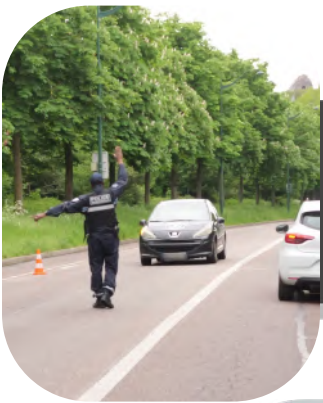
Information dissemination

Urban issue

Raise awareness

Public safety and police presence

General announcement

Drugs and alcohol-related issues

COMUNICADO

DETENÇÃO DE SUSPEITO DE ROUBOS E DE AGRESSÕES A MULHERES

Lisboa   Divisão de Investigação Criminal   29 Junho

Try Pitch

COMMON TOPICS

Public safety concerns and crime rates

Traffic management and road safety

Public sentiments about police performance and conduct

Reports of incidents and call for police action

CITY SPECIFIC

Stockholm - concern of crime

Madrid - environmental concern

Riga - scooter issue

Paris - public gathering

Lisbon, Paris - nightlife

Copenhagen, Stockholm - religion and multicultural

….

Try Pitch

LONDON

A:Reporting channels and citizen engagement

S:Authorities' accountability

AMSTERDAM

A:Requesting public help in investigations

S:Express urgency for support and attention

BERLIN STOCKHOLM

Similar crimes and incidents, including discussions on drone surveillance in Stockholm.

Try Pitch

ACCOUNT

SEARCH

Drug-Related Incidents: arrests	WARSAW ROME	Protests against drug consumption
Showcase diverse police activities	PRAGUE	Dissatisfaction and criticism of police efficiency
Investigate a violent video	HELSINKI	Concerns about online bullying and police response
Prompt police response, arrests, and domestic situations	PARIS	Area controls and drone surveillance
Environmental matters: waste disposal	MADRID	Public green space
Engage the public and explain police terminology	VIENNA	Express gratitude and recognition of police response

SENTIMENTS IN ACCOUNT AND SEARCH TWEETS
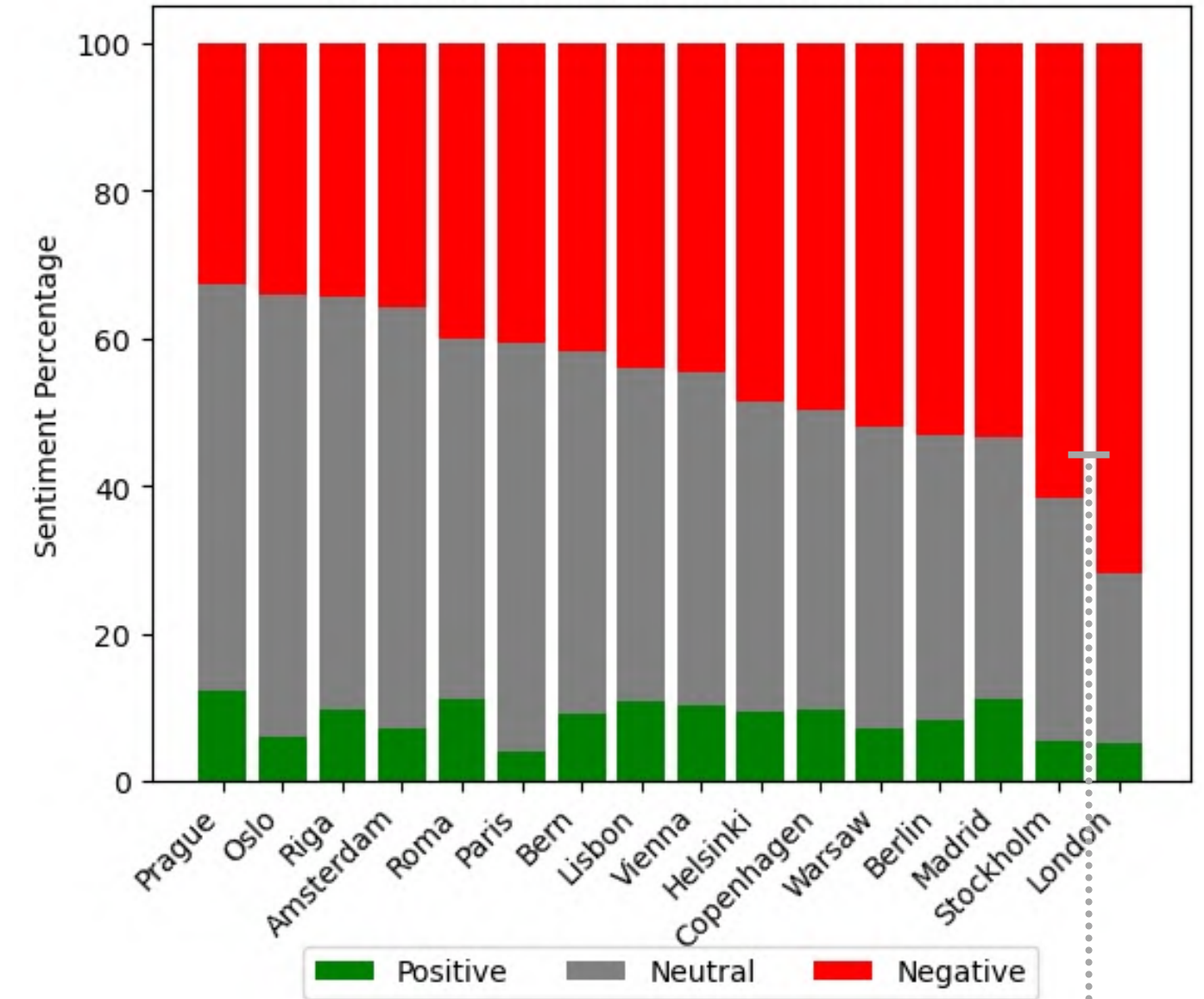

Sentiment Distribution of Account Tweets

Sentiment Distribution of Search Tweets
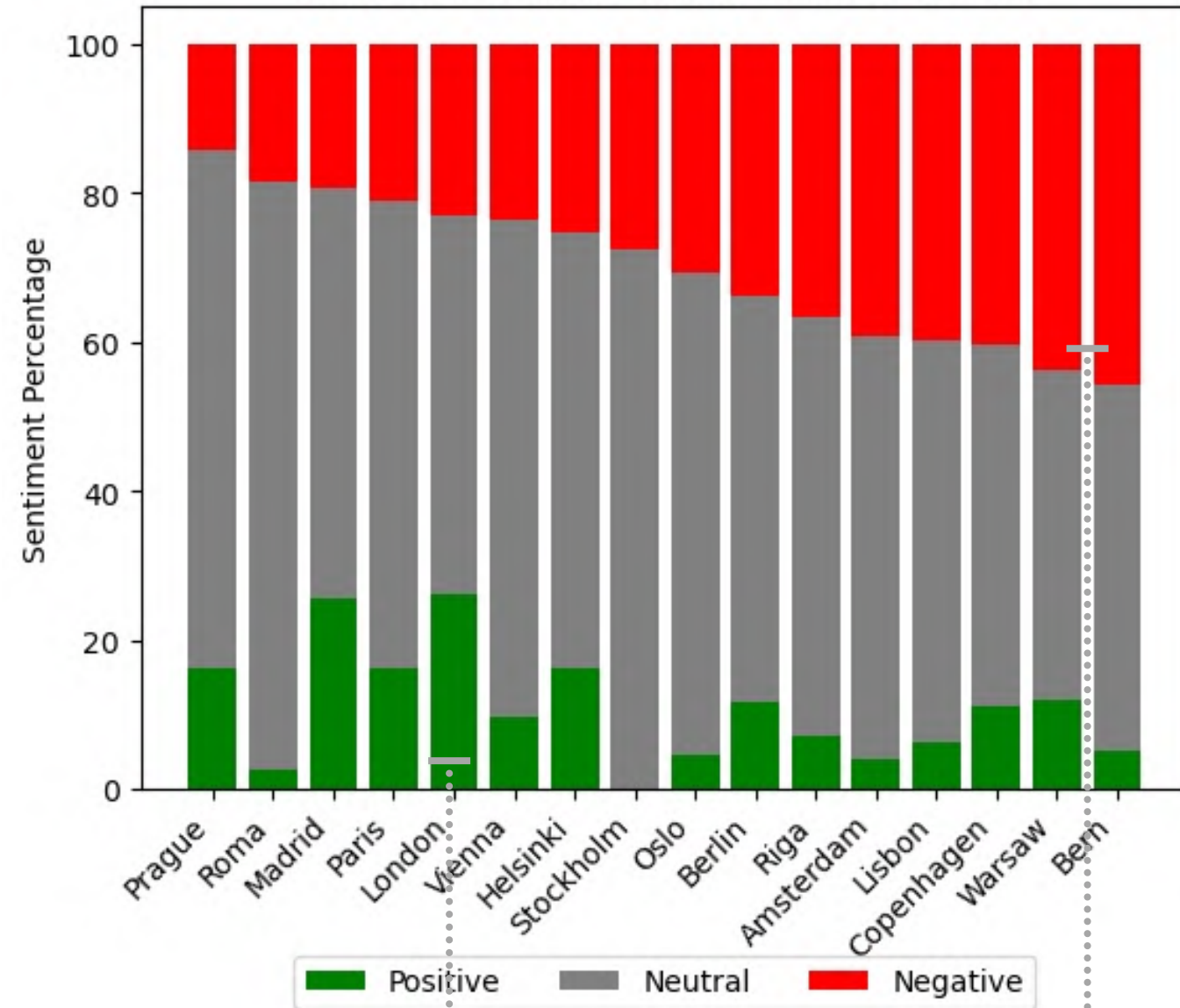
London 26.27%: encourage citizen cooperation
Madrid 24.45%: issues reminders and safety alerts

Bern 45.82%: alls for witnesses and reactions to public events
Warsaw 44.82%: related to crime

London 71.88%: calls for accountability and fairness Stockholm
Stoockolm 61.6%: crime reporting and public security concerns

Try Pitch

CONCLUSION AND FUTURE WORK

MAIN TAKEAWAYS RQ1:

FUTURE WORK

- Twitter isn't an apt medium for crime reporting or emergency service
- More frequently using social media during special events Eg. Berlin, Vienna, Twitter Marathon

- Retweets: Helsinki, London - H; Vienna, Oslo, Lisbon -L
- Retweet accounts: government bodies, local law enforcement, emergency services, and transportation services

- Resource sharing: 10 cities have more than 80%, no correlation with engagement level
- Shared URLs: official city authorities' websites ; Copenhagen, Vienna, Berlin, Paris tweets links of social media platforms

- Local language predominates and English tweets topics aligned closely with all tweets
- Hashtags: City name and Police related term were commonly used; Berlin, Madrid, and Rome had the most diverse hashtag vocabulary

- Social media usage preference
- demographic analysis of followers

- Why retweet ratios vary among cities and the type of content retweeted.
- What topics are being retweeted

- Investigate Hashtags meaning
- Role of hashtags in driving engagement

CONCLUSION AND FUTURE WORK

FUTURE WORK

- Topics in **accounts tweets** closely associated with police duties
- Unique focuses:

Vienna - understand police work; London - report guidelines; Prague - public appreciation; Amsterdam - crime-related topics

- **Search tweets** topics are disparate , primarily complaints or concerns over crime rates and public safety.
- Various focuses :

Paris - public gatherings; Madrid - environmental issues; Copenhagen, Oslo, Amsterdam - crime-related and multicultural concerns.

- Sentiment of tweets aligns with their topics: account tweets - neutral; search tweets - negative

- Link engagement and topics to an activity timeline
- Tone conveyed in account and search tweets

Try Pitch

THANK YOU

Q&A

A Comparative Analysis of European City Police Presence on Twitter

Master Thesis Defense

Shasha Jiang

Try Pitch