

WHEN GDPR MEETS CRAS  
(CREDIT REFERENCE AGENCIES):  
LOOKING THROUGH THE LENS OF  
TWITTER

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# I. INTRODUCTION

- Credit scoring is a technology used as a decision-making tool to measure the creditworthiness of applicants.
- In order to measure the credit score of an individual, a range of information is taken into account. Such information is provided to the service provider by an intermediate agency called a credit reference agency (CRA).
- CRAs are informational brokers that collect information from various sources and provide credit-related information on individual and corporate consumers to other organizations.

- Despite the legal grounds of CRAs' data collection and processing practices, privacy concerns on CRAs and the strengthened data subject rights introduced in the GDPR in 2018 led some privacy advocating non-governmental organizations (NGOs) to challenge the legal grounds of CRAs.
- Despite the sensitive nature of data collected and processed by CRAs and the campaigns organized by privacy-advocating NGOs, we noticed a lack of research on how the general public perceive the privacy debate around CRAs.
- To fill this research gap, we conducted a data-driven analysis of CRA- and GDPR-related discussions on Twitter.
- We focused on the GDPR as a representative data protection law .

## 2. CRA

- CRAs are informational brokers that collect information from various sources.
- In terms of organizations providing data to CRAs, they include many sector such as
  - leasing companies,
  - credit card suppliers,
  - mortgage providers,
  - retail credit suppliers,
  - insurance companies,
  - debt collectors,
  - 'enforcement divisions' (courts, tax authorities and the police),
  - governmental departments,
  - telecommunication operators,
  - internet service providers,
  - television suppliers,
  - utility (electricity, gas and other fuel) suppliers
  - brokers.

- Information collected by CRAs can be categorized into a number of classes.
  - general consumer data (e.g., personally identifiable information)
  - information on the credit applications
  - legal information
  - information on family
  - income
  - assets
  - details on credit contracts
  - loan data
  - payment data
- Source organizations update CRAs regularly about any changes of such information, and often electronically in real time.
- CRAs have to comply with various laws and regulations both at the regional (e.g., EU) and the national level like GDPR.

## 3. GDPR

- The GDPR defines a set of principles and the lawful basis for data controllers and data processors to process personal information.



- The GDPR defines several data protection principles an entity must comply with when processing personal data.
  - Lawfulness, fairness and transparency
  - Purpose limitation
  - Data minimisation
  - Accuracy
  - Storage limitation
  - Integrity and confidentiality (security)
  - Accountability principle
- The GDPR provides several rights to individuals.
  - Right to be informed
  - Right of access
  - Right to rectification
  - Right to erasure

## 4. METHODOLOGY AND DATA USED

- Experian, Equifax, and TransUnion were selected as representative CRAs for our study.
- In addition to the three CRAs, we also looked at the
  - UK's data protection authority - ICO
    - two UK-based privacy-advocating NGOs,
      - Privacy International
      - Open Rights Group (ORG).





#### 4.METHODOLOGY AND DATA USED

#### 4.1.ORGANIZATIONS AND SOCIAL MEDIA ACCOUNTS STUDIED

Organization (Account)	#(A)	#(B)	#(C)
Experian (@Experian)	3.400	540	13.629
Equifax (@Equifax)	3.598	210	2.574
TransUnion (@TransUnion)	3.330	120	1878
ICO (@ICOnews)	3.292	233	-
Privacy International (@privacyint)	3.268	128	-
ORG (@OpenRightsGroup)	3.244	105	-

- For social media platforms, we decided to focus on Twitter because it is more open and many past studies on social media used data on Twitter.
- The actual Twitter accounts used can be found in the table.

### 4.1. RAW DATA

Organization (Account)	#(A)	#(B)	#(C)
Experian (@Experian)	3.400	540	13.629
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- Tweets used in the study were collected via a Python library called Tweepy that allowed us to access different Twitter APIs more easily.
- (A) Firstly, we collected the most recent tweets published by official Twitter accounts of the six target organizations using the User\_Timeline API

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- (B) Secondly, we collected tweets in which official twitter accounts of the six target organizations were mentioned using ScrapeHero Cloud.
- (C) Lastly, we used Twitter's Search API to collect public tweets that cover the names of CRAs.
- At the end, we collected 39,549 tweets in total. The number of tweets crawled for each group can be seen in the table.

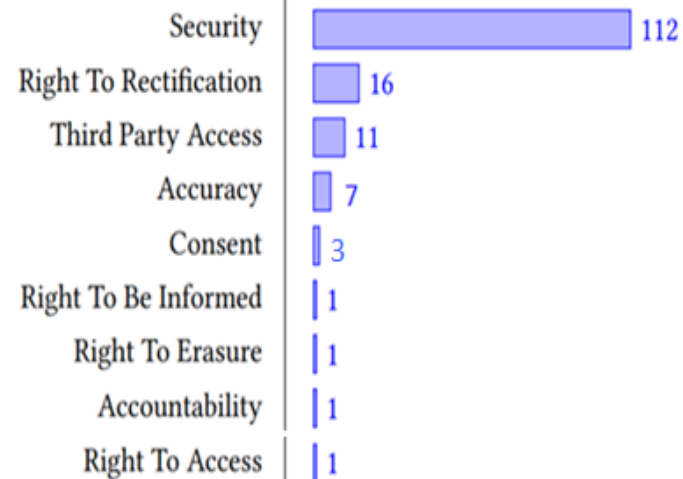
## 4.3 DATA PRE-PROCESSING AND CLEANING

- Our data collection protocol includes the following three main steps.
  1. **CRA-related filtering:** We crawled the tweets posted by the 3 CRAs, and tweets of the other 3 organizations that mentioned those 3 CRAs.
  2. **GDPR-related filtering:**
    - We extracted 85 keywords manually.
    - Tweets that cover at least one of the identified keywords.
    - 12,000 tweets after filtering step.
  3. **Manual Filtering:**
    - A majority of the tweets obtained in the second step are generic tweets published to inform people about data privacy or the GDPR.
    - We also eliminated informative tweets manually that give very general information about the GDPR.

#### 4. METHODOLOGY AND DATA USED

Access	Accountability	Accuracy	Adequate	Automated	Decision	Certification	Codes of conduct	Confidential	Consent
Contract	Controller	Correct	Criminal	Cyber	Cyberattack	Data integrity	Dataleak	Datasafety	Delete
Encryption	Erase	Erasure	Fair	Fairness	Forget	Forgotten	Format	GDPR	Hold
Impact	Inform	Law	Lawful	Legal	Legitimate	Limit	Limitation	Long	Machine Readable
Minimisation	Minimum	Needed	Object	Obligation	Offence	Outside	PECR	Period	Personel
Probability	Principle	Processing	Proccesor	Profiling	Protection	Public Task	Purpose	Rectification	Relevant
Remove	Request	Restrict	Retain	Retention	Revoke	Right	Secure	Security	Sell
Sensitive	Sold	Special Category	Storage	Third Party	Third Parties	Transfer	Transmit	Transparency	Transparent
Update	Vital Interest	Confidentiality	Withdraw	Years					

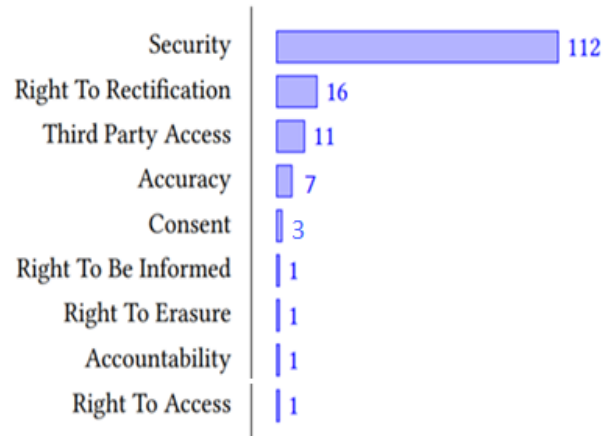
## 4.4 ANALYSIS



- We manually labeled the 153 tweets to uncover CRA-related data privacy issues discussed on Twitter. While labelling, we took the definitions given in the GDPR individual rights and key principles into consideration and performed the labelling accordingly. The labels were checked by two independent researchers.

## 5.RESULTS

- Discussions were dominated by individuals (109 tweets out of 153),
- CRAs published data privacy related tweets only to inform their followers regarding their security measures.
- In order to identify cultural differences in reactions to CRAs, we have also tried to access country information of the individuals.
  - 89 unique accounts
    - Access information of 56 accounts
      - 44 accounts US (51.2% of the 89 unique account)
      - 5 accounts UK (5.8% of the 89 unique account)
      - Netherlands, South Africa and Algeria



- Reviewing the 153 relevant tweets, it is clear that data privacy discussion on Twitter were dominated by data breach incidents.
- Sharing personal data with third parties, other generic security issues and accuracy of the data processed by CRAs are the other popular topics.
- Although not very common, we can still see tweets regarding data subject rights including the right to be informed, the right to erasure and the right to rectification.



Security	112
Right To Rectification	16
Third Party Access	11
Accuracy	7
Consent	3
Right To Be Informed	1
Right To Erasure	1
Accountability	1
Right To Access	1

## 5.1. SECURITY

### 5.1.1. DATA BREACH INCIDENTS

- “@DrFairkid Thank you for contacting Equifax. If you have a question about the 2017 data breach settlement, please visit: <https://t.co/EVlBzHwHQo>. -George R.”
- “What’s the security of my private data worth? Apparently, less than \$9. Thanks, @Experian!”
- “@Equifax So you loose my data, take 6 months to tell me, fail to respond within time limit, admit loosing data but dont think I have a complaint to uphold? WTF are you i...? Complaint lodged with UK Information Commissioner, see you in Court!”

### 5.1.2. GENERAL SECURITY ISSUES

- “We’re proud of the credit and identity protection tools that we provide to consumers. Read our Corporate Responsibility Report at: ...”
- We’ve been working diligently to improve cybersecurity efforts. Learn more about how our Workforce Solutions team is transforming security: ..”.
- The idea behind a freeze is that you are blocking access to your report from a potential identity thief...A credit freeze may seem like an extreme move, but it can be a powerful way to protect against identity theft.”
- “You protect your smartphone, so you should protect your credit too. Freeze your credit and keep identity thieves out - for free!.”

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## 5.2. RIGHT TO RECTIFICATION

- “@S.... Hi Shalom! I’m sorry to hear you are now seeing this inaccuracy. We can assist with correcting this information on your TransUnion credit file...!”
- “Please explain to me @Experian & @TransUnion how can I have a 30 day late payment reported to my credit report for an account that was paid in full over a month ago? ...”
- “@Ebony07169884 We apologize for the trouble this has caused, please send us a DM with your personal information, so we can properly assist you.”

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## 5.3. THIRD PARTIES

- “@Experian Stop selling customer information to companies. Since making an account with you all 5 days, I’ve been receiving at least 8 spam emails a day.”
- “@TransUnion This was just after your employees stole their IDs and sold them online and to your business partners aka collection companies!”
- “So turns out @Experian sold my contact info to credit card companies without my consent ... Pretty underhanded. Time for some subject access requests I think. #GDPR”

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## 5.4. ACCURACY

- “@Equifax has been hit with a class action lawsuit from a consumer who claims she is a victim of inaccurate credit reporting...”
- “GDPR on the credit agencies? They hold inaccurate info on you. They must correct it”
- “@Equifax .. I raised this with you weeks ago and it is still not resolved. Your colleagues are not even replying to me or updating me anymore so I may just have to report to the ICO as your company clearly doesn't understand its GDPR responsibilities fully.”

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## 5.5. CONSENT

- “You can opt out of the sale of your data (as well as request access and deletion) at @TransUnion...”
- “ @Experian stop emailing me. I’ve unsubscribed #GDPR”

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## 5.6. RIGHT TO BE INFORMED

- “#fact 88% of consumers want more control over the use of their #data. Find more about #consumerpreferences for #security #personalisedexperience and #digitalengagement in the 2020 Global Identity & Fraud Report. <https://t.co/CyMPtIRsu8>”.
- “..Equifax are sending a data processor to your system that gathers personal data and returns an automated decision. Do you inform users of this? How does GDPR apply for cases like this?”.

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## 5.7. RIGHT TO ERASURE (RIGHT TO BE FORGOTTEN)

🐦 “@wbm312 At least Transunion is candid about selling your information. Even if you’re unable to get the info deleted, a little more power over non-transaction use of your data is huge.”

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## 5.8. ACCOUNTABILITY

🐦 “@Equifax you need to be accountable to each persons data stolen every person that this affects remove all inquiries and increase scores by 50points PERIOD this pisses me off <https://t.co/KRzgQzVfht>”



THANK YOU FOR LISTENING

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