

Scams as “everyday misinformation”: A computational analysis of financial complaints on social media in Kenya, Nigeria, and Uganda



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Abstract

- Global concerns about misinformation often center major world events, like elections and health crises, with less regard for misinformation that people encounter in their everyday lives.
- Building from the assumption that scams are embedded in everyday life, we analyze social media data related to financial institutions from Kenya, Nigeria, and Uganda to explore patterns related to financial scams and fraud.
- We use a large dataset from Facebook (user comments to public posts) and Twitter (tweets and replies).

Background

- Banal and mundane experiences with misinformation often take the form of online, phone, and mail scams as actors pose as representatives from a range of organizations, including government agencies, financial institutions, and hospitals (Burnes et al., 2017).
- This kind of “fakery” is so common online that Poster (2022) suggests it is foundational to the digital economy.
- In the Global South, these concerns are acute as internet users generally have little to no financial or digital literacy education and lack of jobs and economic concerns can make the benefits (falsely) offered appealing (Grohman et al., 2022; Kass-Hanna, Lyons, & Liu, 2022).

Methods

- This study uses a dataset of 2.3 million social media posts retrieved from Facebook (N = 954,216) and Twitter (N = 1,297,441) between July 2019 and July 2020.
- All tweets and comments directed at financial institutions in the three countries were collected. To identify relevant financial institutions (e.g., banks, fintech providers, mobile money) experts in each country were contacted to provide a list.
- To identify comments/tweets discussing scams/fraud, two coders coded a sample (n = 1,500) using a binary codebook (“Yes”/“No”).

Key findings

- There’s an upward trend in the number of comments/tweets that refer to scams and other forms of financial misinformation. The outbreak of COVID-19 did not lead to a significant increase in references to this type of information.
- There are limited differences in overall raw counts of top used words by country, with the exception of the names of mobile phone companies, which provide financial solutions in these countries.

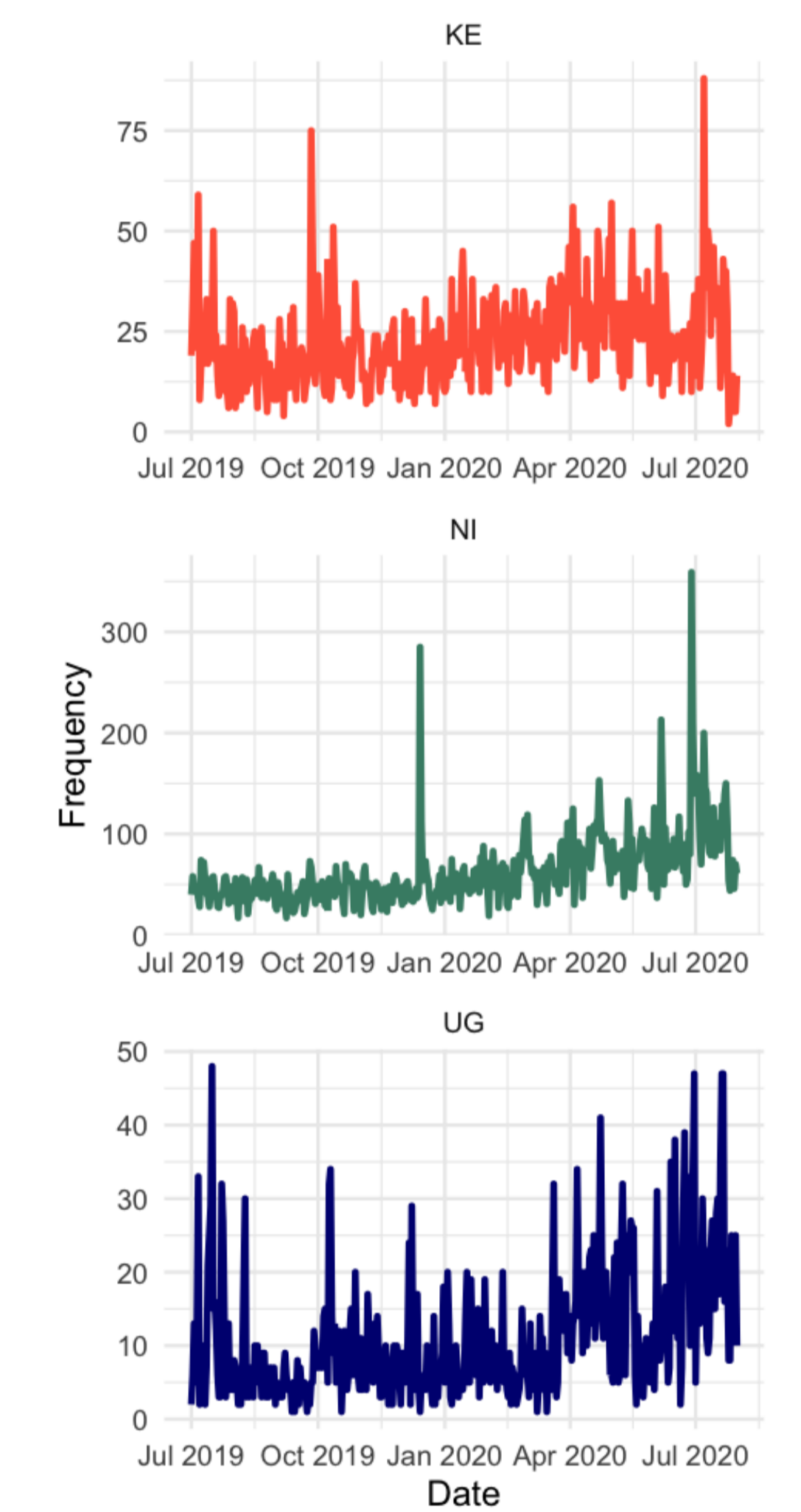


Figure 1. Daily number of comments/tweets about “everyday misinformation” by country

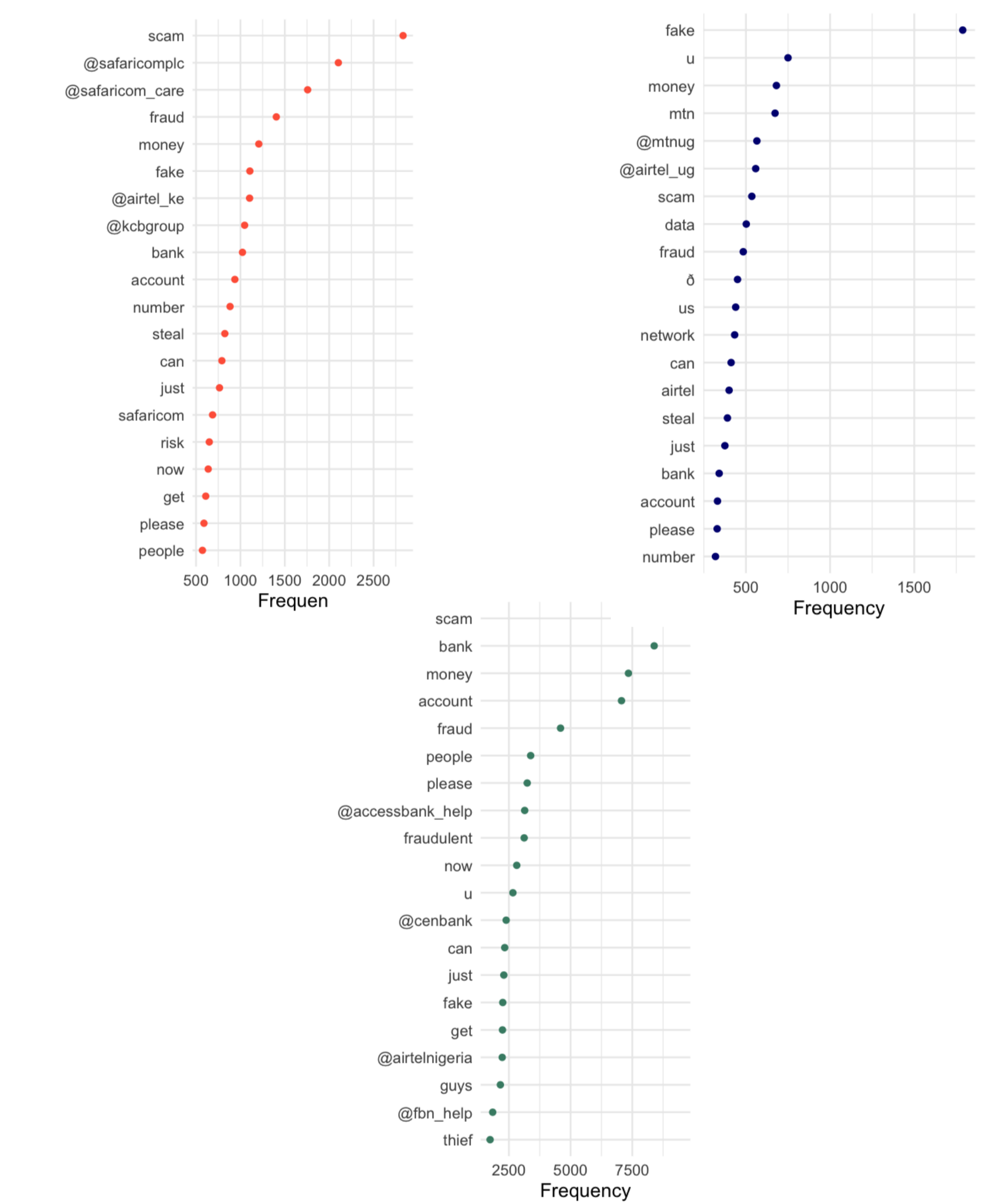


Figure 2. Absolute word frequency (Top 20) per country

- Semantic networks show some more nuance on the instances of everyday misinformation such as stealing credentials, fake customer service calls, and false promises of free/cheap mobile top ups.

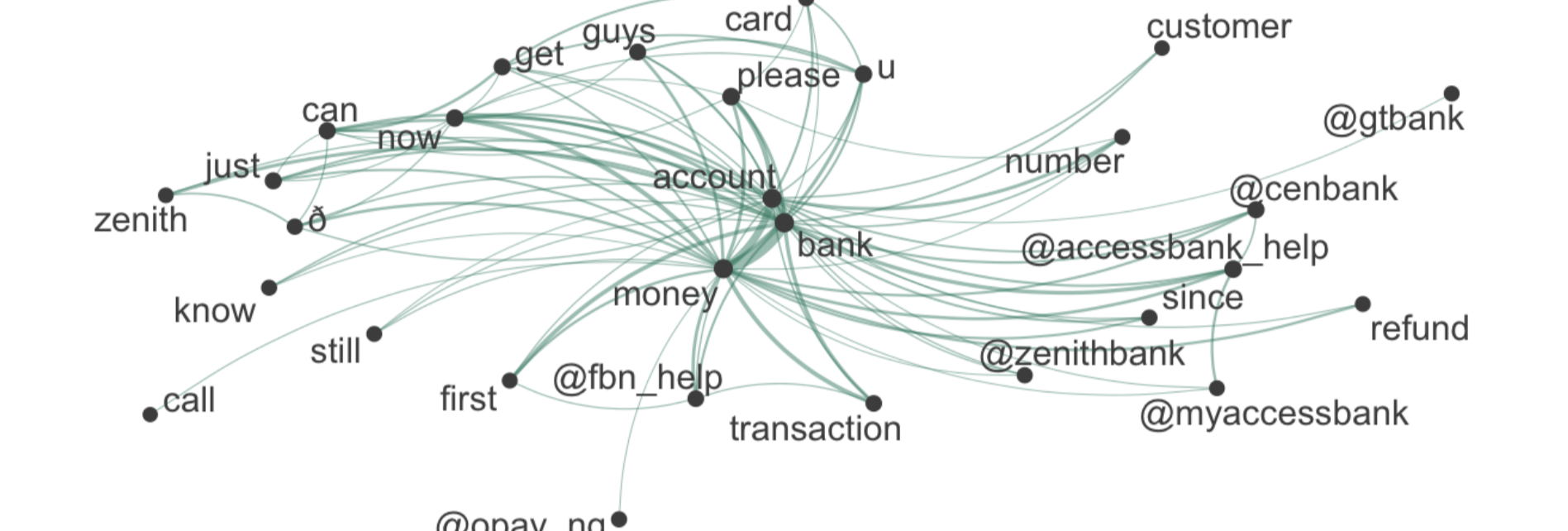


Figure 3a. Network of word co-occurrence in posts from Nigeria

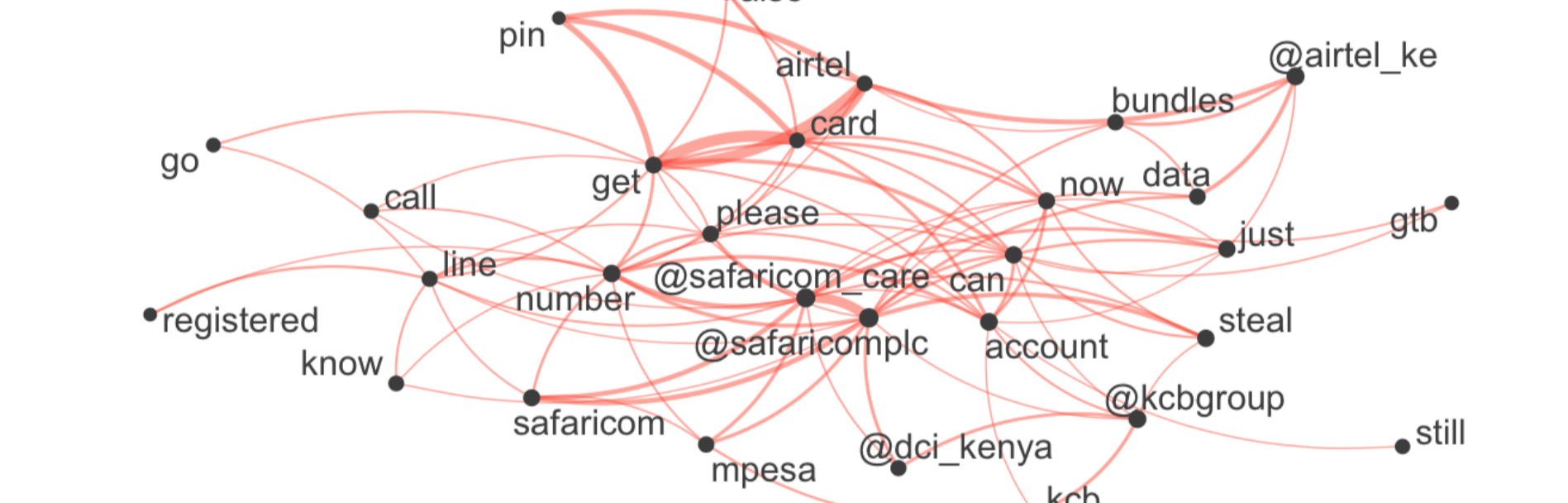


Figure 3b. Network of word co-occurrence in posts from Kenya

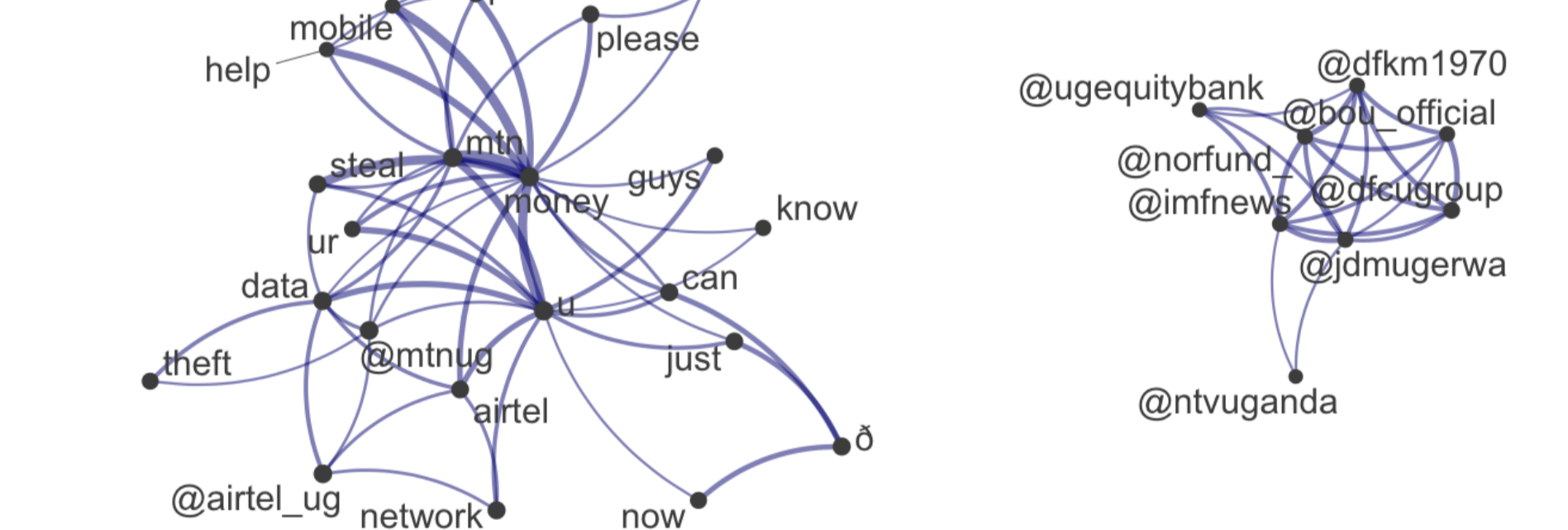


Figure 3c. Network of word co-occurrence in posts from Uganda

- This manually annotated dataset was used to train a Naïves Bayes (NB) classifier to automatically classify the entire dataset. This resulted in the identification of n = 38,382 items in the dataset (approximately 2%) that referred to scams/fraud.
- To collect data, we relied on a data analytics firm that had access to the Twitter commercial API and public Facebook comments posted on public pages on the platform.
- No personally identifying information was collected via Facebook. On Twitter, usernames were collected, but removed prior to analysis. Each user was, instead, given a random number. No key was generated to connect the random IDs with the original users.

Takeaways

- #1: We find that users of Facebook and Twitter in Kenya, Nigeria and Uganda turn to social media to seek remedy, advice, or comfort after exposure to different forms of everyday financial misinformation/scams.
- #2: The prevalence of financial scams in these countries, which is not negligible (at around 2% of messages directed at financial institutions), poses a considerable challenge given the on-going economic and financial disparities and inequities in these countries, which leave consumers vulnerable.