

Social Network Analysis

Presented by Group G

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Compare how central bank communicate in the past and in the current situation

How central bank communicate to the citizen in the past era. (1980)

- Speeches
- Reports
- Press conferences
- Research papers

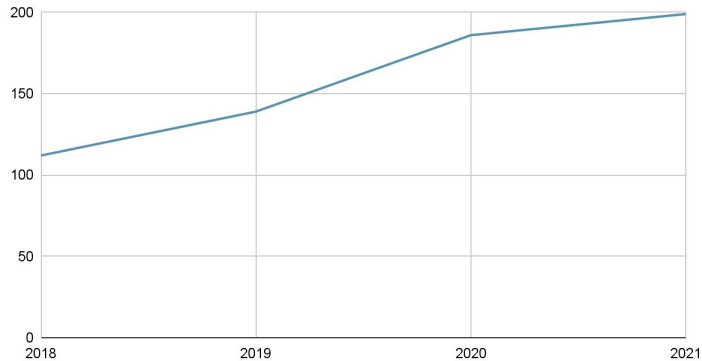


How central bank communicate to the citizen in the digital era. (2020)

- Website
- Social media
 - Twitter
 - Facebook

Twitter is one of the tool to communicate for central bank.

Twitter Users



Twitter is our main sources of data

- The total users of twitter is approximately **200** million in 2021.
- It is the platform that people can share their opinion.
- We analyze **4** central bank accounts

Data from Twitter



Central Bank of Kenya ✓

@CBKKenya

CBK is responsible for formulating monetary policy, promoting price stability, issuing currency and other functions conferred by an Act of Parliament.

[แปลประวัติ](#)

📍 Nairobi, Kenya centralbank.go.ke 📅 เข้าร่วมเมื่อ พฤศจิกายน ค.ศ. 2012

103 กำลังติดตาม 316.1K ผู้ติดตาม



Central Bank of Kenya ✓ @CBKKenya · 15 น.ย.

Presentation to the Senate Committee on Kenya's Public Debt. Read the full presentation at centralbank.go.ke/uploads/presen...



💬 5

🔄 56

❤️ 73



Bank of Canada ✓

@bankofcanada

Canada's central bank. Promoting the country's economic and financial welfare. Keeping inflation low, stable and predictable. En français : [@banqueducanada](#)

📍 Ottawa, Canada bankofcanada.ca 📅 เข้าร่วมเมื่อ มิถุนายน ค.ศ. 2008

36 กำลังติดตาม 191.7K ผู้ติดตาม



Bank of Canada ✓ @bankofcanada · 8 น.ย.

Bank of Canada maintains policy rate, continues forward guidance and current pace of quantitative easing [#economy](#) [#cdnecon](#)



Bank of Canada maintains policy rate, continues f...

The Bank of Canada today held its target for the overnight rate at the effective lower bound of ...

bankofcanada.ca

💬 13

🔄 35

❤️ 15



Data from Twitter


Central Bank of India ✓
 @centralbank_in
 Welcome to The Official Twitter handle of Central Bank of India. Bank offers a wide range of products and services. Please join us to know more.
 6 กำลังติดตาม 37.4K ผู้ติดตาม

Central Bank of India ✓ @centralbank_in · 14 n.y.
 This Ganesh Chaturthi, celebrate the goodness of your Central Bank of India RuPay card with offers on sweets, clothes, electronics, & much more.

This Ganesh Chaturthi, celebrate the goodness of your Central Bank of India RuPay card with offers on sweets, clothes, electronics, & much more.

- 15% Discount on purchases up to 10,000
- Get 30% off on Uber
- Up to 50% off on Ajio

RuPay

5 replies 11 retweets 46 likes


한국은행
 BANK OF KOREA
 @bok_hub
 국민으로부터 신뢰받는 글로벌 선진 중앙은행 / 한국은행 공식 트위터 계정(The Official Twitter account of Bank of Korea)
 112 กำลังติดตาม 2,372 ผู้ติดตาม

한국은행 @bok_hub · 16 n.y.
 [<BOK 이슈노트 2021-23호> 기후변화 대응이 거시경제에 미치는 영향]

자세히 보기 bit.ly/2XuKIaZ

#한국은행 #bankofkorea #중앙은행 #금융공기업 #금융 #경제 #보도자료 #bok이슈노트 #BOK20모형 #기후변화

것으로 추정

- 시.1.1.2021에 따라 2050년까지 GDP성장률이 연평균 0.08~0.32%p 하락하고 소비지출 기증율은 0.02~0.09%p 상승하는 것으로 추정
- 그러나 거둬들이는 탄소세를 탄소저감설비 및 저탄소기술수준 향상 등 정부의 친환경 투자를 위한 재원으로 활용할 경우 탄소세의 부정적 성장효과를 상쇄시킬 수 있음
- 매년 GDP 1% 규모의 정부투자는 탄소세의 부정적 효과를 상쇄시키기 어렵게 것으로 추정
- 반면 매년 점진적으로 높여,는 탄소세 수입의 일정부분을 정부투자에 활용할 경우 탄소세의 부정적 효과를 상당부분 상쇄시키는 효과가 있는 것으로 추정

시사점

2 replies 3 likes

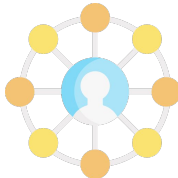
Use NodeXL on Excel to analyze data



1. **Select** interesting Central **Banks**



3. **Compute** Network indicators

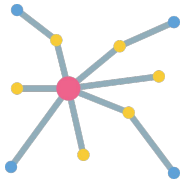


5. Find **Centrality index** and subgroups



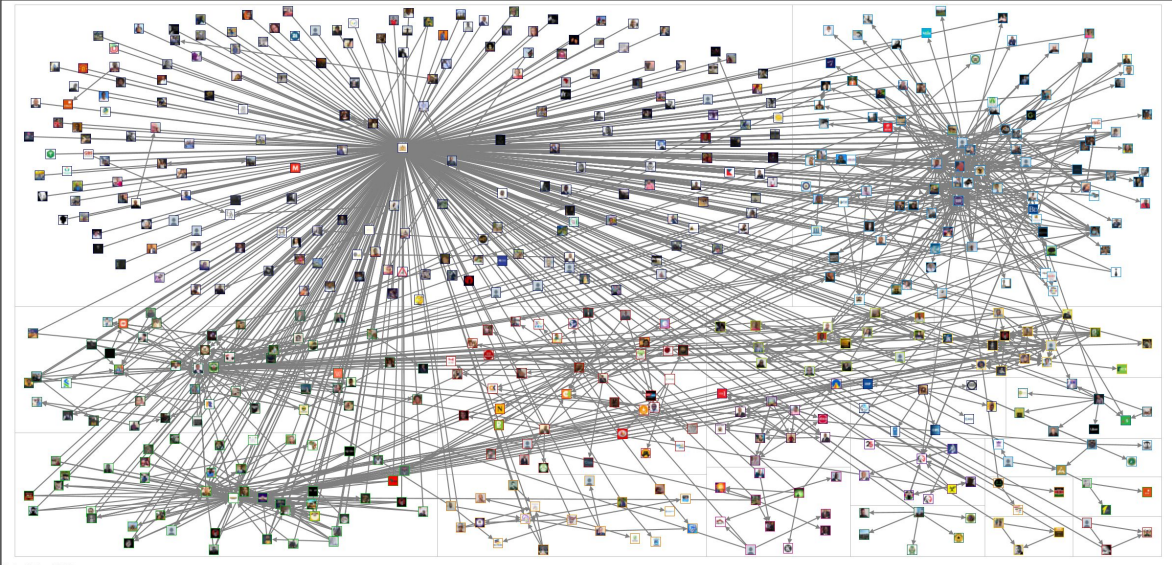
2. **Gather information** of Central Bank activities on twitter by using NodeXL in Excel

4. Create **Network Chart**



Results from the visualization of data shows the complexity of the network of Kenya

Bank of Kenya (@CBKKenya), visualized by NodeXL



@CBKKenya
Betweenness centrality 274,347.549918

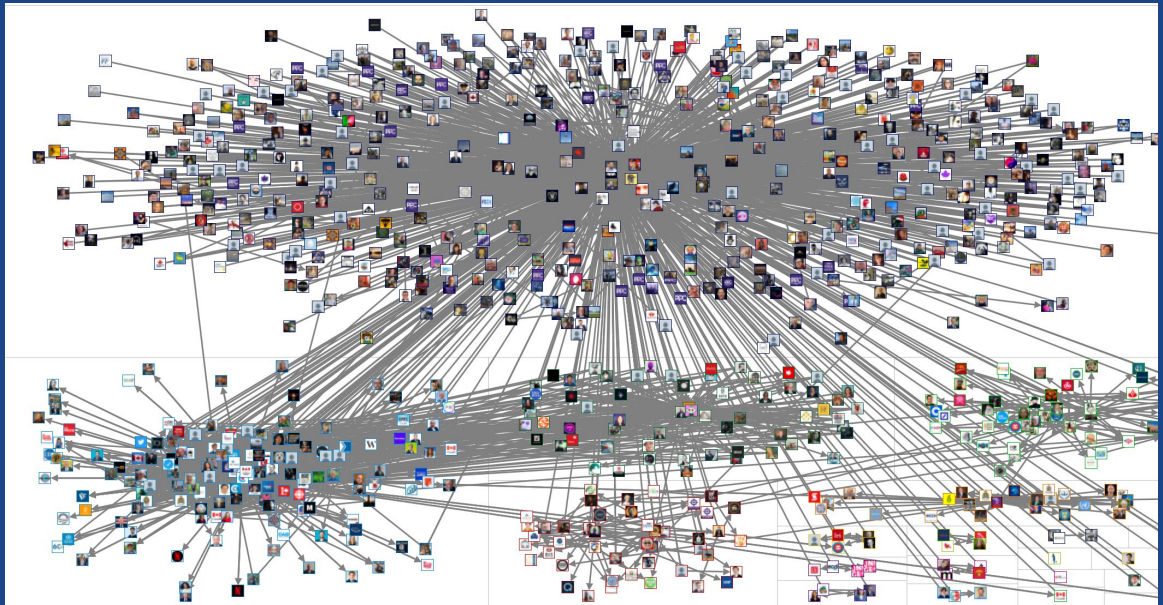
@willisowiti
Betweenness centrality 30,682.12397

@maxmurungah
Betweenness centrality 11,525.971569

Subgroup: 19

For Central Bank of Canada, very high Betweenness Centrality clustering around its account

Bank of Canada(@bankofcanada), visualized by NodeXL



@bankofcanada
Betweenness centrality 743,742.229558

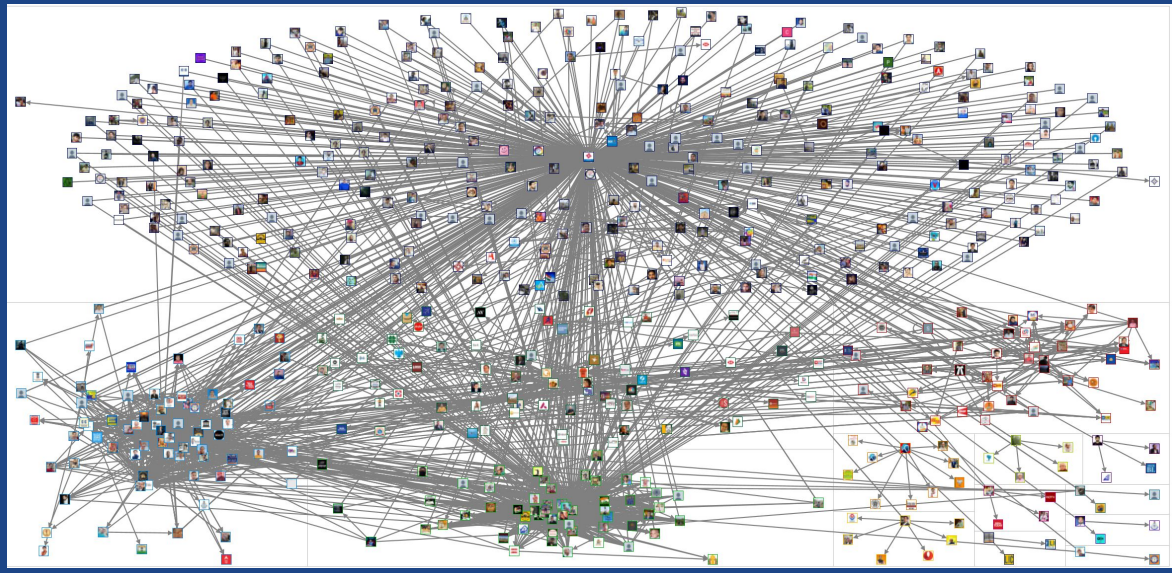
@77bluejays
Betweenness centrality 109,622.100996

@maximebernier
Betweenness centrality 6,847,948.911053

Subgroup: 22

Results from the visualization shows that the network of bank of India looks like a diamond

Bank of India(@centralbank_in), visualized by NodeXL



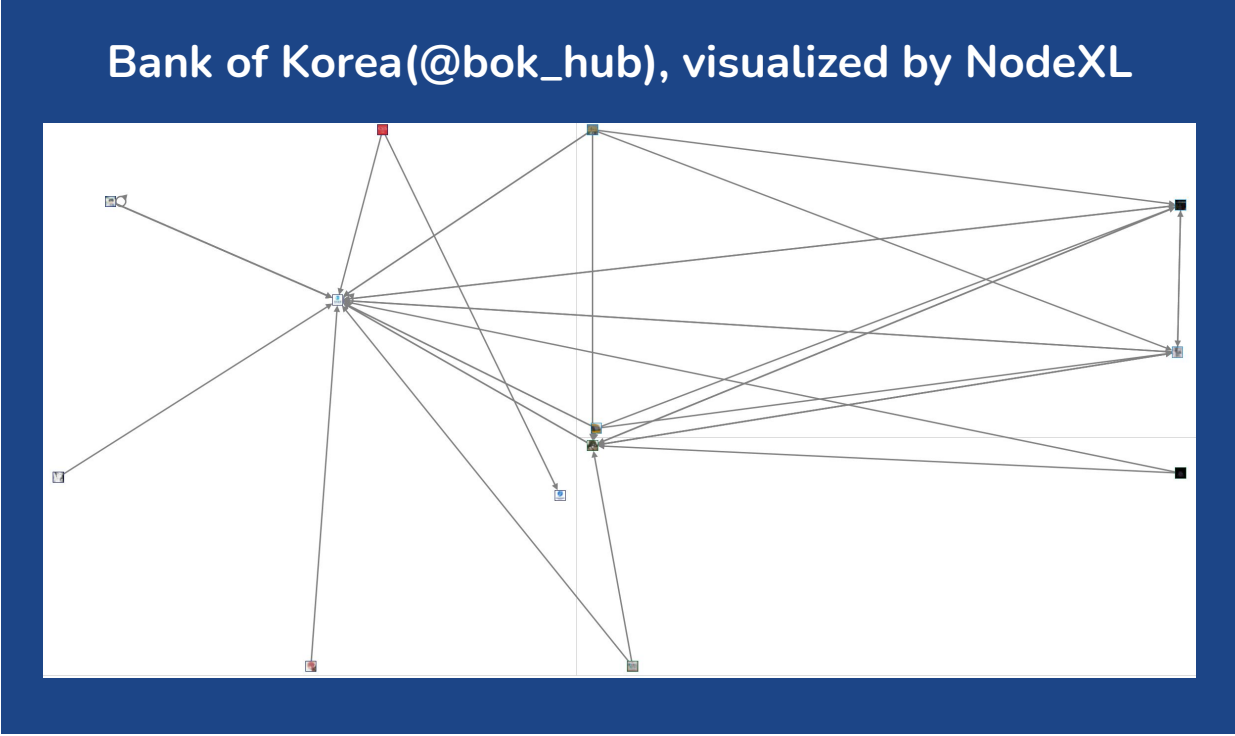
@centralbank_in
Betweenness centrality 318,592.985414

@itnlh
Betweenness centrality 17,758.985137

@maximebernier
Betweenness centrality 17,725.765469

Subgroup: 14

Central Bank of Korea's twitter has the smallest network



@bok_hub
Betweenness centrality 97.5

@csiskoreachair
Betweenness centrality 22

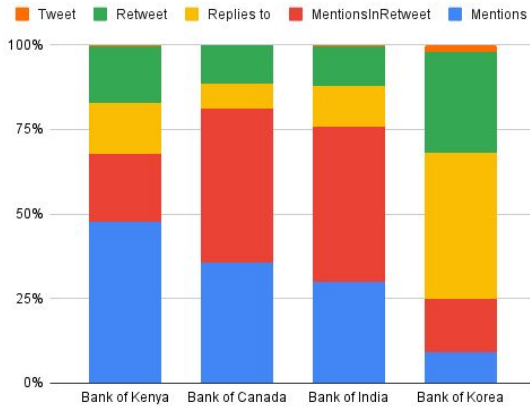
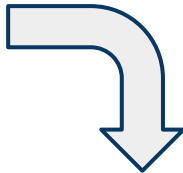
@mzwdj8etiv2vi8n
Betweenness centrality 9.5

Subgroup: 3

The table shows the differences between number of main messaging of central banks

	Mentions	MIRT**	Replies to	Retweet	Tweet
Bank of Kenya	823	346	260	287	8
Bank of Canada	1729	2216	357	555	7
Bank of India	1168	1797	467	459	18
Bank of Korea	4	7	19	13	1

MIRT = MentionsInRetweet



We can interpret the meaning from each and every of the key network statistics.

	Vertices	Unique Edges	Total Edges	Diameter	Average Geodesic Distance	Graph Density	Modularity
Bank of Kenya	545	955	1722	4	2.564868	0.003932812	0.421995
Bank of Canada	927	2167	4864	4	2.498082	0.00301141	0.37906
Bank of India	605	1265	3909	4	2.575868	0.005363691	0.341064
Bank of Korea	13	18	44	3	1.692308	0.166666667	0.191374

The table illustrates the key network statistics among four central banks.

Use the result from NodeXL to improve information spreading



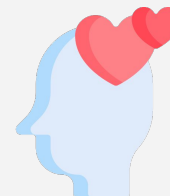
Corporate with influencers that have high value of centrality to further help promote tweets from Central Banks



Central Banks' twitter activities should be more consistent



Summarize information in tweet instead of putting link with more information



Use social network analysis to give more information on Twitter based on people's interest