

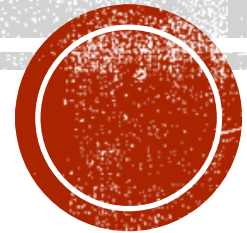
DEEPPAKES IN THE PUBLIC EYE: A GOOGLE TRENDS STUDY OF TAIWANESE BEHAVIOR (2017–2025)

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INTRODUCTION

- In recent years, advances in artificial intelligence (AI) have led to the development of algorithms capable of generating content that is nearly indistinguishable from real images, videos, audio, and text (Chesney & Citron, 2019).
- One of the most prominent technologies for generating content is deepfake technology.
- First deepfake example emerged in 2017 on Reddit.
- Interest in deepfakes has significantly increased among both the public and the academic community (Tulga, 2024).



INTRODUCTION

- These studies offered different definitions of deepfake.
- Deepfakes can be defined as hyper-realistic videos, images, text, and audio that are digitally manipulated to portray individuals saying or doing things that never occurred.
- More simple; deep learning + fake



INTRODUCTION

- Technical View (How to Create deepfake);
- Generative Adversarial Networks (GANs);
- There are two neural networks;
 - Generator network
 - Discriminator network



INTRODUCTION

- While this technology has positive applications in fields such as education, healthcare, and entertainment (Jin et al., 2025; Makransky & Petersen, 2021; Xu et al., 2025), it is more frequently exploited for harmful purposes (Wong, 2025).
- Deepfake technology uses for numerous malicious purposes.
- These are;
 - Non-consensual sexual content (Majority of deepfake around 96%)
 - Fraudulent activities
 - Political content;
 - Disinformation
 - Manipulate public perception
 - Reputational harm or damage
 - National Security (Ukraine war, Pentagon fire and India «tiger» examples)

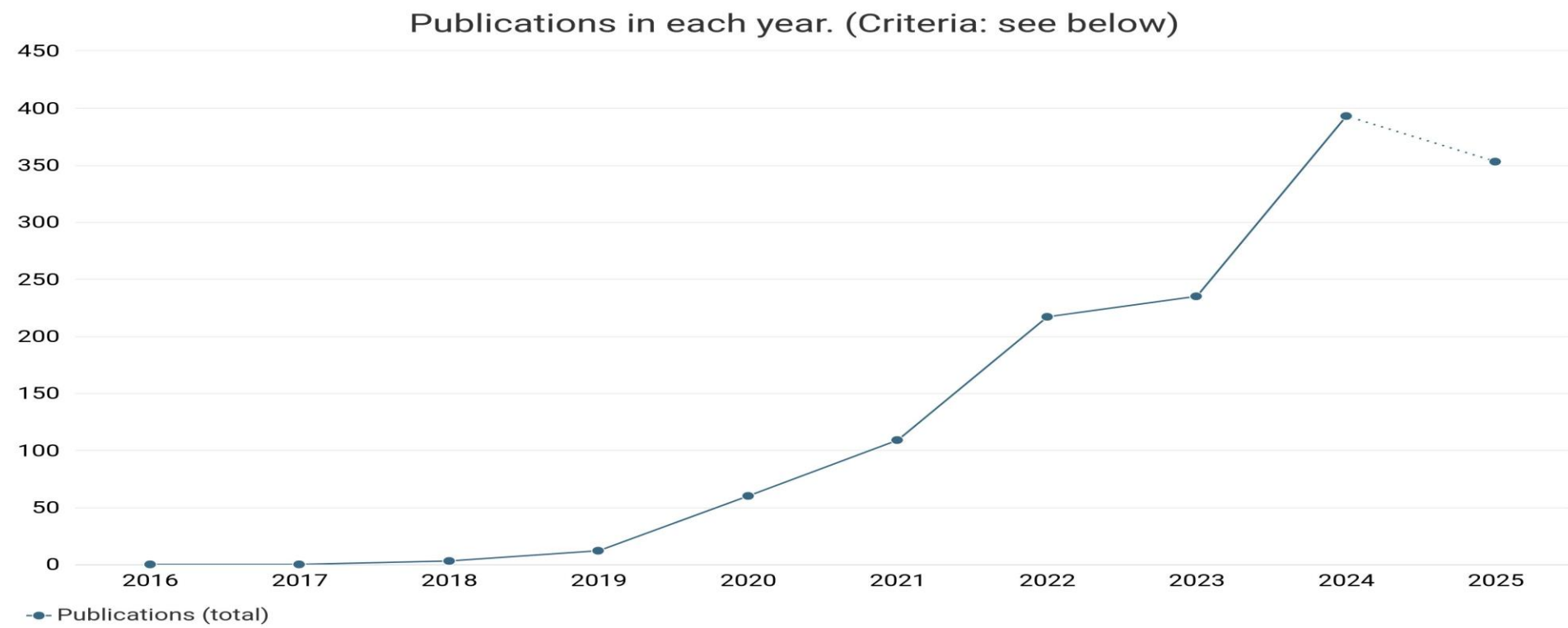


INTRODUCTION

- Important Incident in Taiwan related to deepfake
 - 2021:
 - A 26-year-old Taiwanese YouTuber generated deepfake videos of political figures and celebrities (Xiaoyu (小玉)).
 - 2022:
 - Rob Wittman's, Vice chairman of the United States House Armed Services Committee, Deepfake related to Taiwan.
 - 2023:
 - August 16: Deepfake audio of Ko Wen je
 - December 22: Deepfake audio of Lai Ching-te
 - 2024:
 - January: Sexual deepfake videos of Lo Chih-Cheng and Hung Sun-han
 - January 9: Deepfake audio related to Lai Ching-te
 - April 04: Scam involving deepfake
 - December 22: Deepfake Video of DPP Politician
 - 2025:
 - February: Taiwan UMC founder Robert Tsao's deepfake pictures



LITERATURE REVIEW

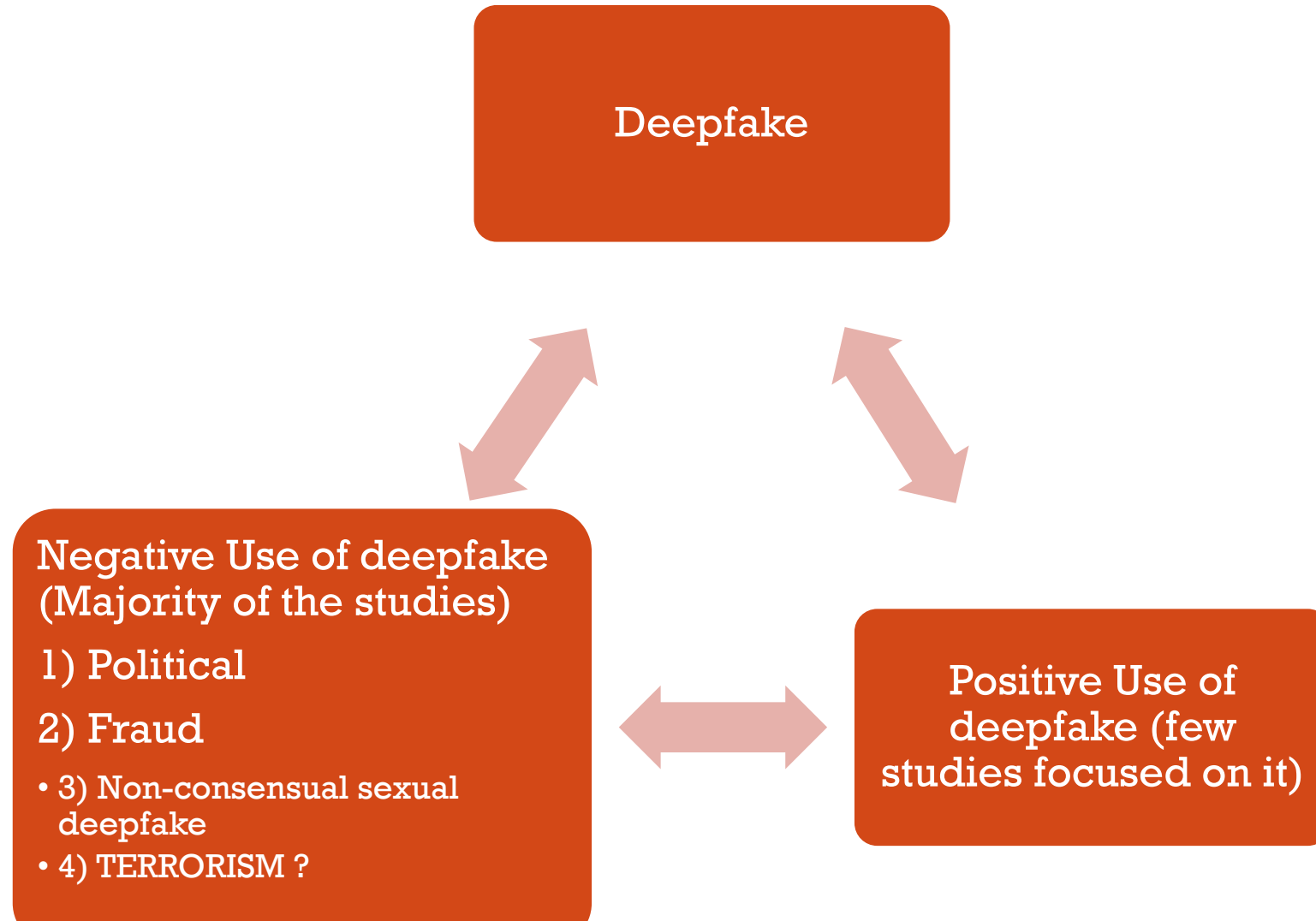


Source: <https://app.dimensions.ai>
Exported: October 14, 2025
Criteria: 'deepfake AND deepfakes AND deep fake' in title and abstract.

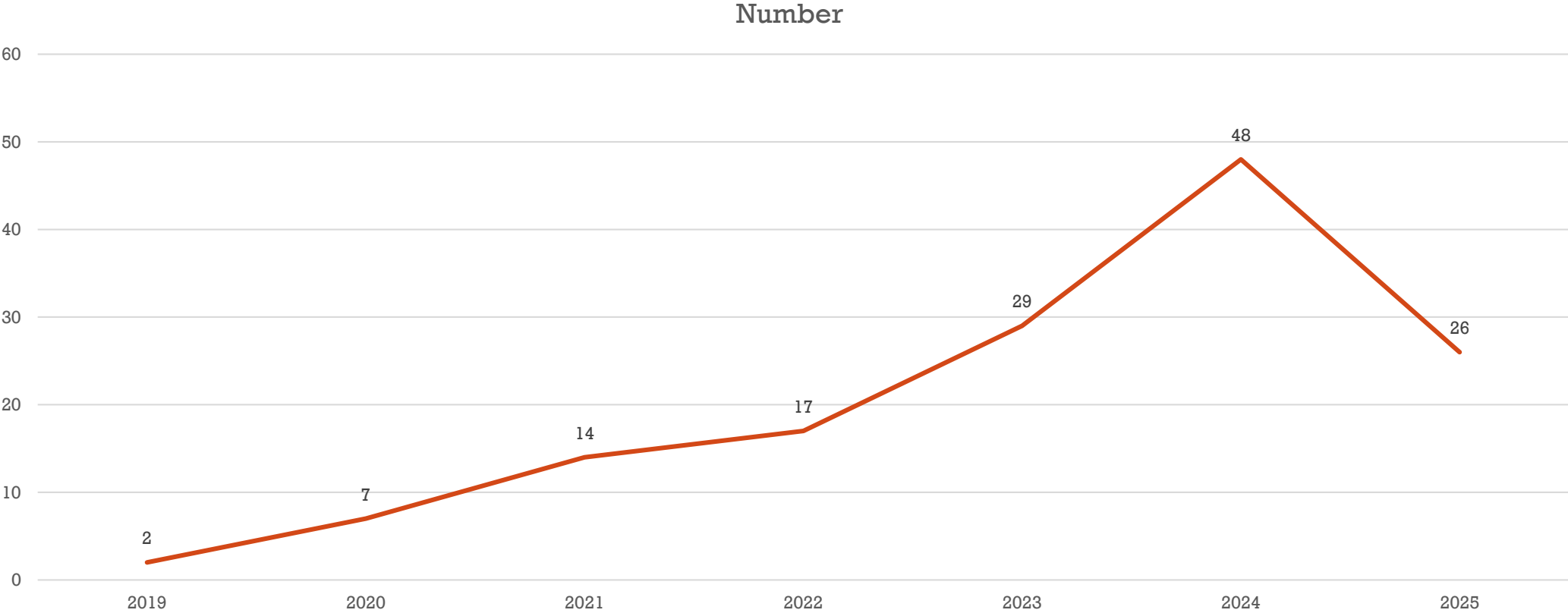
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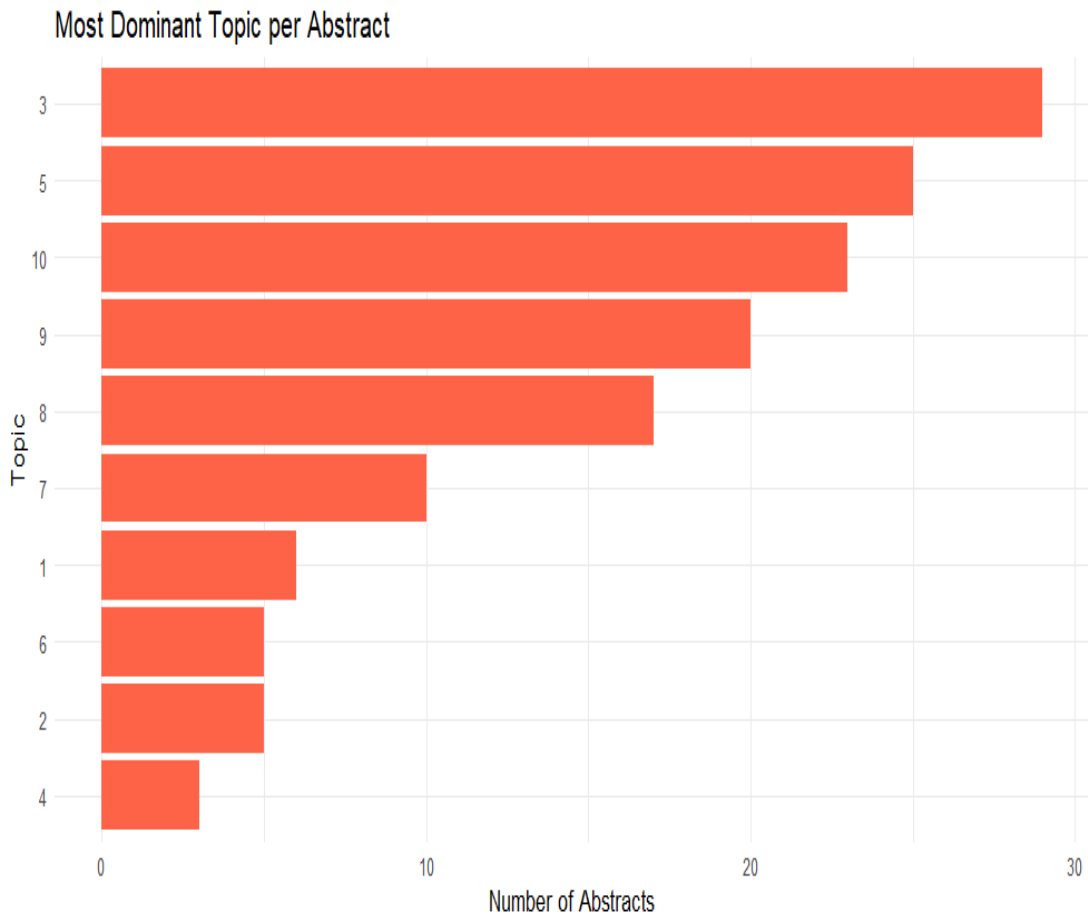
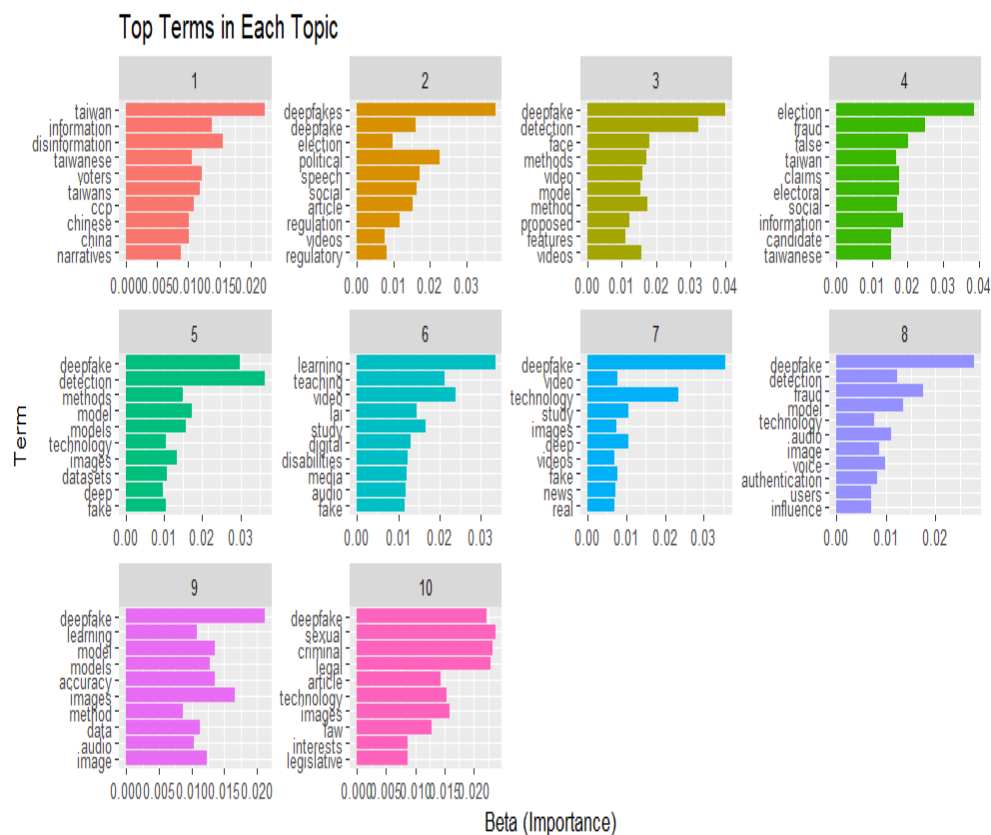
LITERATURE REVIEW



LITERATURE REVIEW (TAIWAN)



LITERATURE REVIEW (TAIWAN)



RESEARCH DESIGN

- Google Trends
 - «gtrendsR» package in R «gtrends» function
 - `gtrends(keyword = c("deepfake"), geo = "TW", time="2017-01-01 2025-10-14")`
- Importance of Google Trends Data
 - Fields using Google Trends
- Why I used Google Trends in this study and why Google for Taiwan?
 - It is important to understand events increased individuals' attention regarding deepfake before their detection accuracy or performance.
 - Many scholar argue that political deepfake more attract attention but NOT REALLY (i.e., South Korea)
 - Taiwan is among the top 10 countries in deepfake-related searches on Google.
 - Most popular search engine is Google in Taiwan



RESEARCH DESIGN

Obtaining dataset

Monthly (Daily Trends)

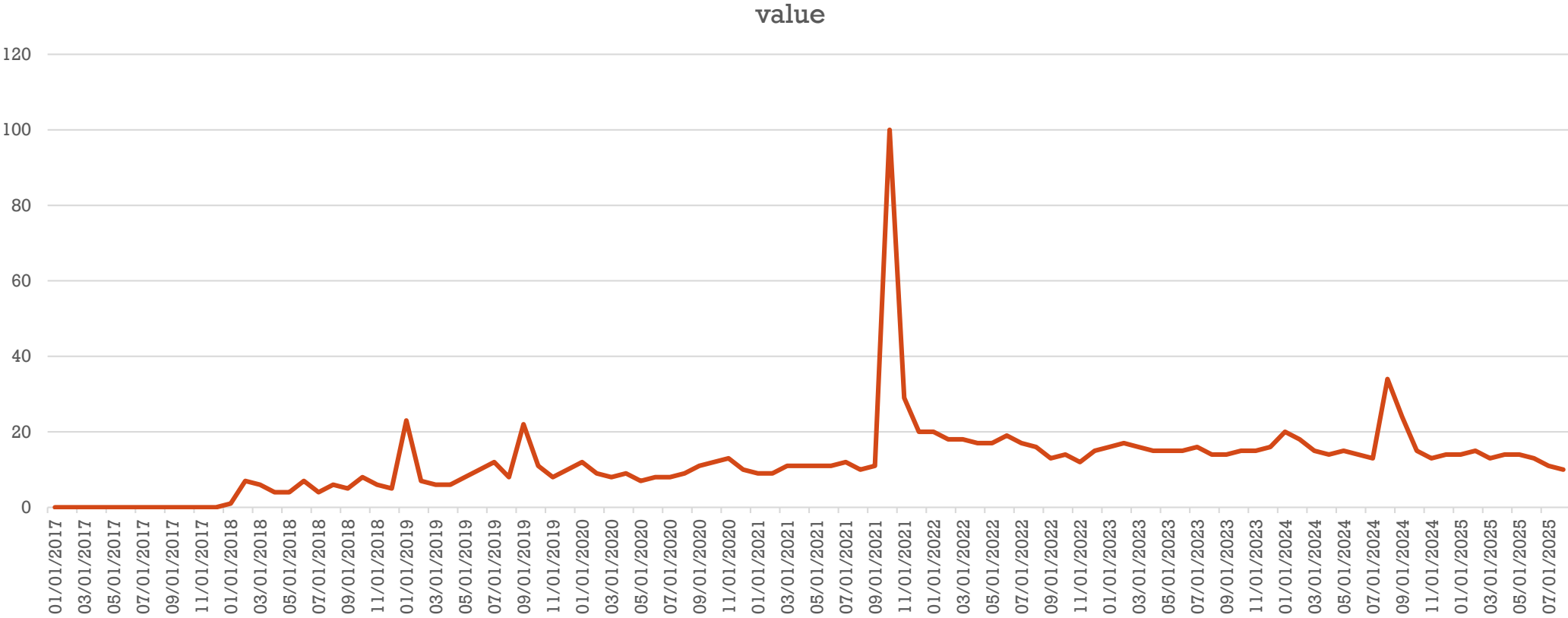
Most Search Terms

Dictionary based Analysis

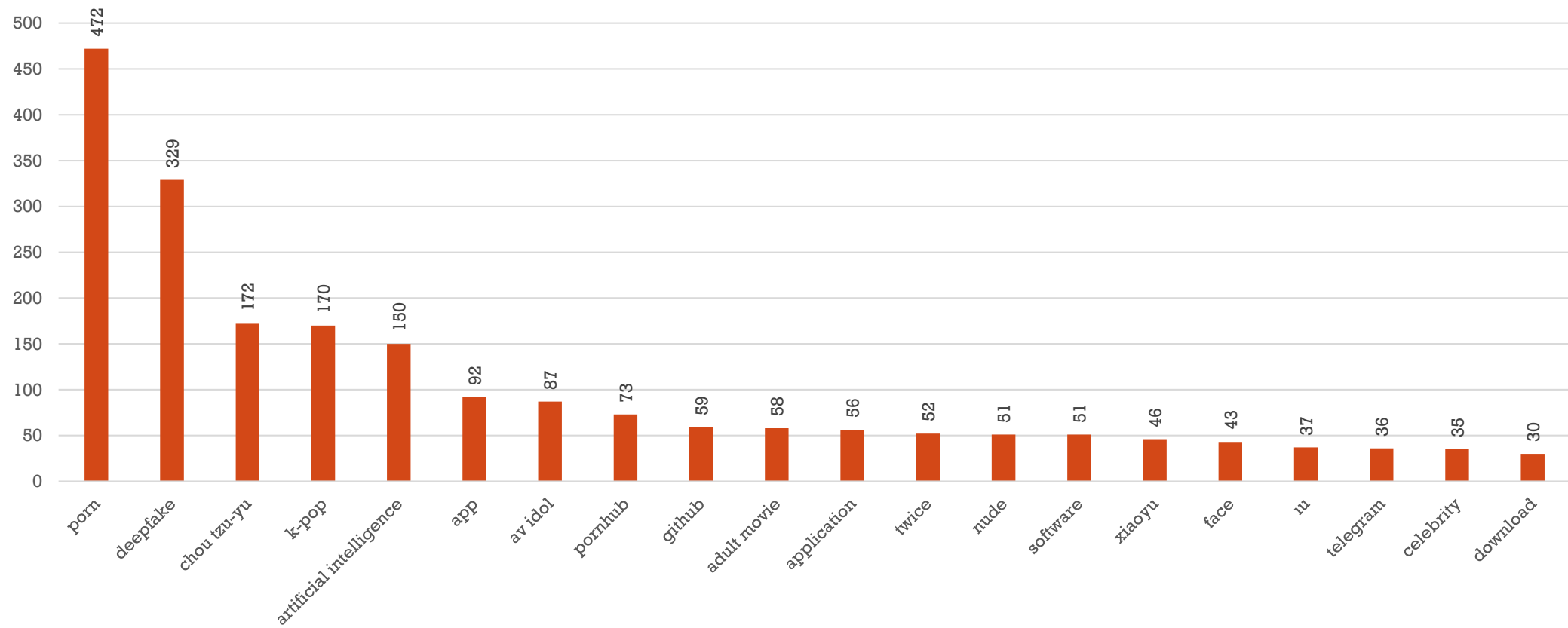
Change of Content



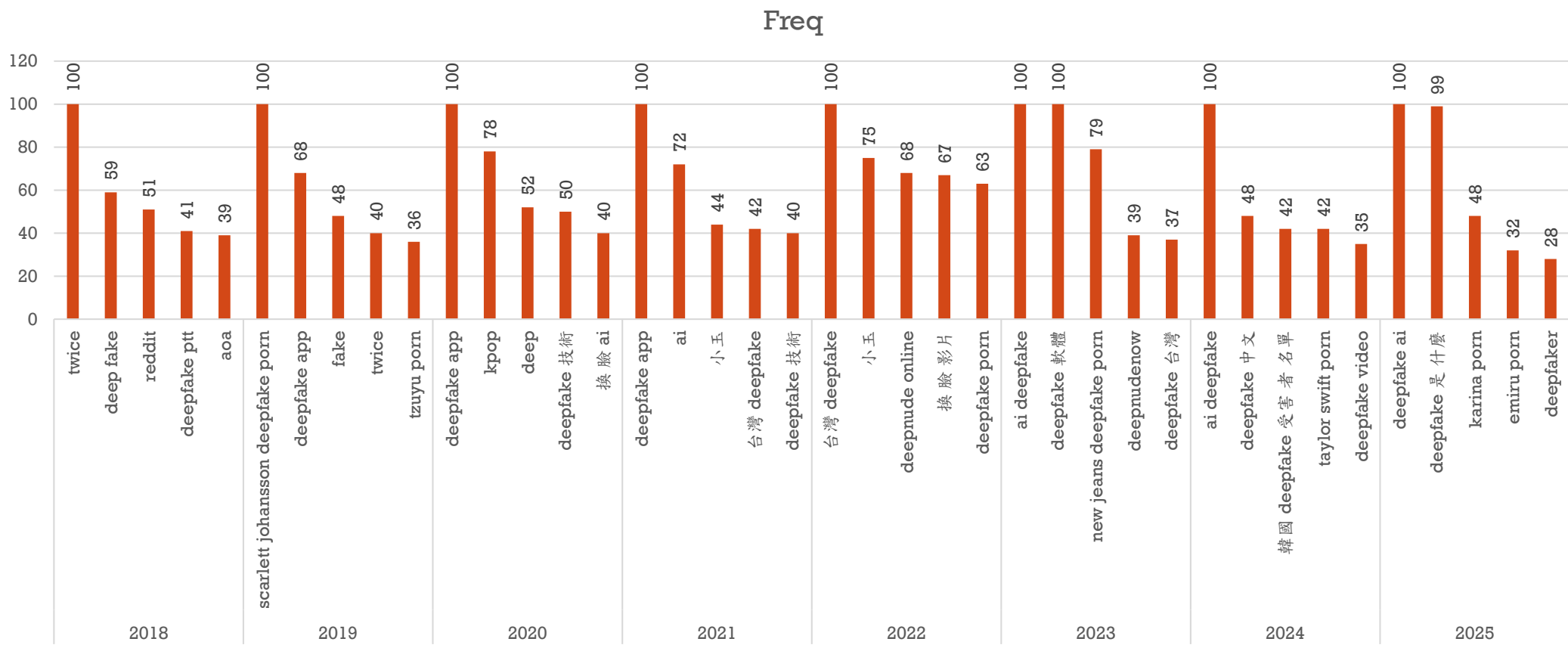
RESULTS



RESULTS

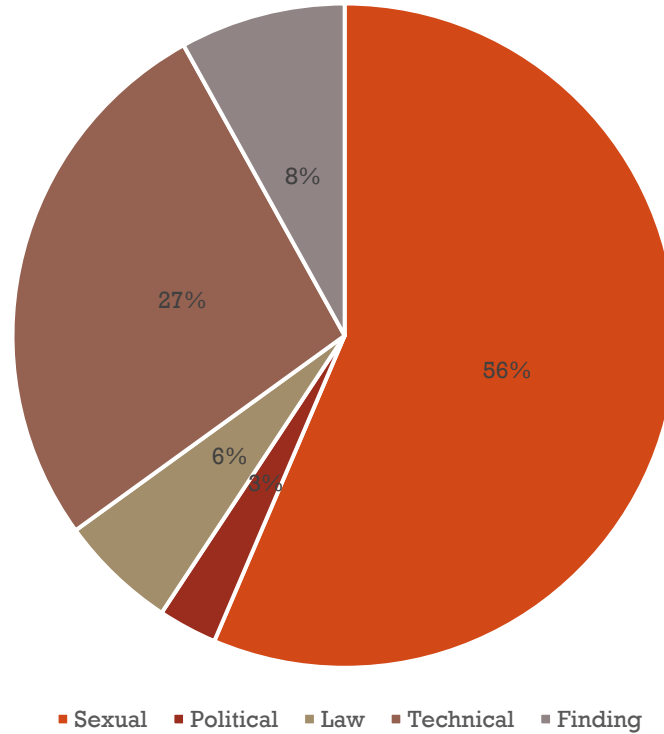


RESULTS

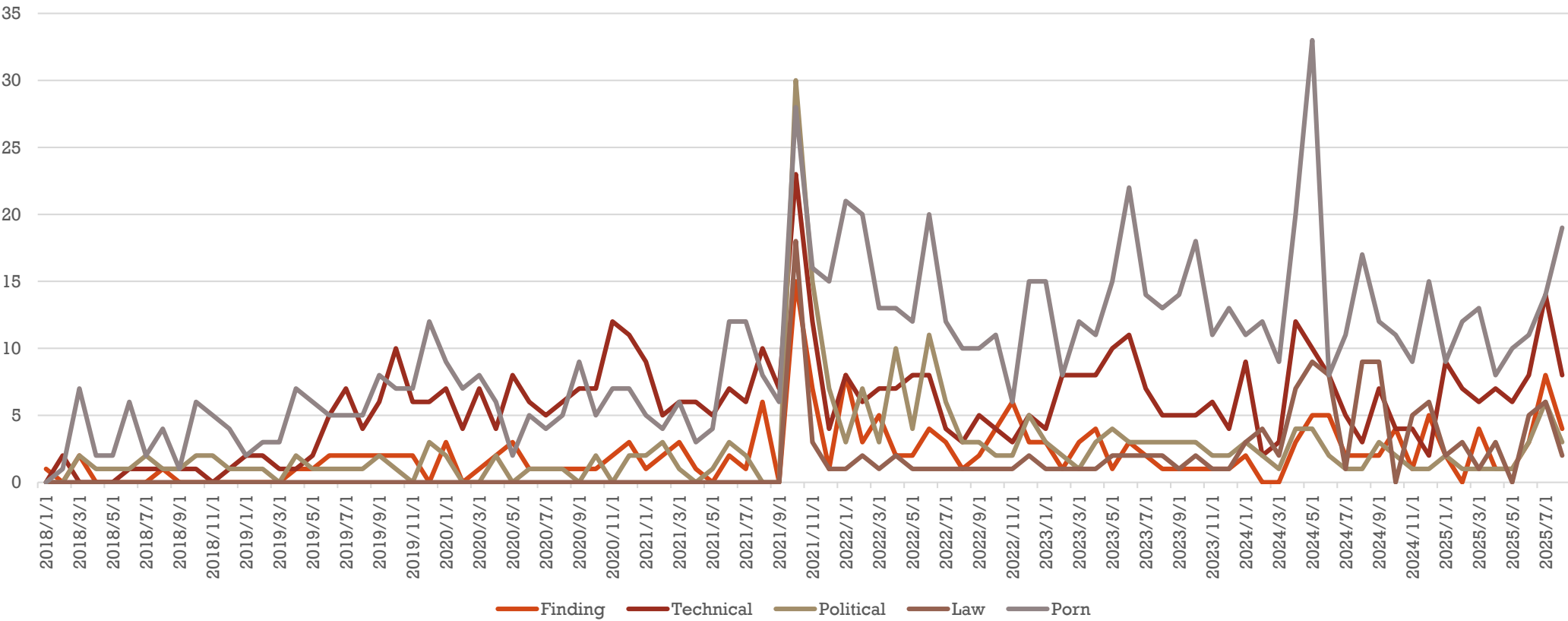


RESULTS

Dictionary based Results



RESULTS



CONCLUSION

- Public interest in deepfakes in Taiwan (2017–2025) has evolved significantly, influenced by real-world events and political incidents.
- Google Trends data offers a valuable lens to trace how societal awareness reacts to deepfake-related developments.
- These study highlights that there are some Societal Risks regarding deepfake in Taiwan. These risks are;
 - Political disinformation & election interference
 - Non-consensual sexual content
 - Fraud and reputational harm
 - National Security



CONCLUSION

- There are steps to be taken to prevent this problem.
- What Can Be Done?
 - 1) Technology Companies (Detection, Authentication, Cross-platform Collaboration)
 - 1) Detection for everyone is critical (they are not really accurate).
 - 2) NGOs (Raising public awareness, Promote digital literacy initiatives)
 - 3) Educational Institutions (Visual and Media Literacy)
 - 4) Governments (Collaboration with tech companies and NGO)



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Thanks for

Listening