

Comparing Energy Discourse in Germany and Japan

Select Findings from the Comparative Energy Discourse
Project (2014-18), University of Tsukuba, Japan

Spring Campus, April 1-5, 2019

Workshop: “Climate Change and Social Networks”, April 2-3, 2019

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Outline

- Project Introduction
 - Genesis and features
 - Method
- Major Findings
 - Network analyses in Japan and Germany
 - Social media strategies of German and Japanese governmental institutions related to the environment
 - Identifying the Fukushima Effect
- Conclusions and Outlook

Introduction

- GEAPON: Global Environmental Policy Network
- Targeting government offices, political parties, business organizations, companies, major NGOs, foundations, and the mass media
- Interview-based questionnaire surveys including questions regarding information exchange, support and resource exchange, and reputation.

GEAPON No. & country	Year	Target number of organizations	Responses	Response rate
GEAPON I (Japan)	1997	129	103	79.8%
GEAPON 1 (Germany)	2000	132	53	40.2%
GEAPON II (Japan)	2012-13	172	107	62.2%
GEAPON II (Germany)	2016-17	162	66	40.7%

Background and aims of the CEDP

1. What is the nature of energy policy?
 - Political level: international (cross-border), national, local
 - Actor level: Legislative (government), corporate, civil society
 - Media level: Traditional mass media and social media (mainly Twitter)
2. How is energy policy discussed in different media formats?
 - Comparisons between offline & online media format
 - Comparisons of relationships as identified through different methods
3. How can policy relationships in different countries be characterized?
 - Through cross-national comparisons such as Germany and Japan

Focused attention on renewable energy policy throughout the world since the Fukushima Dai'ichi nuclear plant accident on March 11, 2011.

CEDP People

Leslie Tkach-Kawasaki
(Principal Investigator)

University of Tsukuba

Yutaka Tsujinaka

University of Tsukuba

Miranda Schreurs

Technical University of Munich

Verena Blechinger-Talcott (from 2016)

Freie Universität Berlin

Tatsuro Sakano

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Yohei Kobashi

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◆Research theme: Comparative Energy Policy and Discourse in Japan and Germany

◆Topic: New regional research spurred by information media advances

Regional research: Topic-Setting Program to Advance Cutting Edge Humanities and Social Sciences

Research (Area Cultivation)

Period: October 2014 to March 2018

Total Funding: 11,163,000 yen

<Principle Investigator>

Leslie Tkach-Kawasaki, Associate Professor, University of Tsukuba



<Research area>

Political communication, new media, website content analysis

<Project website>

<https://energydiscourseproject.wordpress.com>

<Research Overview>

Need to clarify the background related to the differences between German & Japanese energy policy (including nuclear energy)



Comprehensively evaluate the **universality & regional** disparities in German-Japan energy policy

Policy process

- Discourse
- Attitudes
- Relationship
- Evaluation



Media prism

- Mass media
- Govt & legislative processes
- Web•SNS

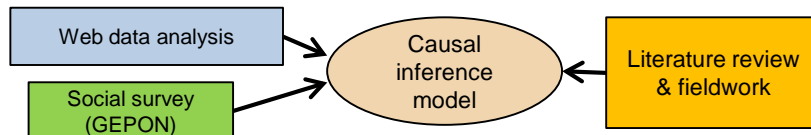


Research results

- Text mining
- Content analysis
- Social surveys
- Network analysis

<Features>

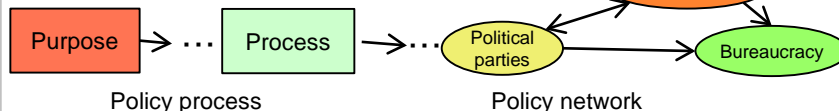
Using combined approaches from natural sciences, humanities, and social sciences, and integrating knowledge as a causal inference model.



⇒Policy process evaluation

<Objectives & results>

(1) Clarify the German & Japanese policy process using a common model to draw network relationships of the policy processes & actors



(2) Describe energy policy environment & discourse in Germany and Japan, considering common elements of international influence, measure differences in understanding & values concerning energy policy

Methodology for realizing CEDP objectives

- Use the GEPON surveys for cross-national comparison between Germany and Japan
- Add Internet-based media components (social media)
- Applying modern methodological tools:
 - Hyperlink analysis (Internet & GEPON data)
 - Network analysis (Internet & GEPON data)
 - Textual & sentiment analysis (Internet-based data)

G-GEPON 2 Detailed Response Rate

Table 1 Response Rate by Organizational Type (G-GEPON 2)

Organizational Type	Survey Sample (N)	Responses (N)	Response rate (%)
International organizations	17	0	0
Legislative actors/political parties	15	5	33.3
Executive and their advisory organizations	27	15	55.6
Environmental interest groups	15	8	53.3
Corporate interest groups	21	10	47.6
Other interest groups	18	10	55.6
Research facilities	42	18	44.7
Economic corporations	16	2	12.5
Mass media	12	2	16.7
Total	183	70	38.3

Source: *Global Environmental Policy Network Survey, Germany (G-GEPON 2), November 2016 to February 2017 Code Book*, (Leslie Tkach-Kawasaki, Editor), September 2017.

Features of the J-GEPON 2 (2012-13) and G-GEPON 2 (2016-17) Surveys

- Comprehensive → actor environment, actor influence, and information & communication exchange
- Events → attitudes & involvement in key policy events
- Identification of organizational goals and targets
- Involvement in policy change

CEDP Select results

Comparative study of Environmental Policy Networks Between Germany and Japan

Background and Theoretical Approach

- Germany and Japan have played essential roles in global environmental governance.
- However, the direction of environmental policy in Germany and Japan is **different**

→ Two studies for comparing the networks

Comparative study of Environmental Policy Networks Between Germany and Japan

Background and Theoretical Approach

- Network governance
 - Autonomous units engaged in creating products or services based on implicit and open-ended contracts
- Collaborative governance
 - Governance that is capable of anticipating antagonism and conflicts, as well as establishing policies by collaboration and coordination in society, is indispensable for environmental issues.
- Homophily
 - Contact tends to be more frequent among similar agents than among dissimilar ones
- Information-sharing network and resource-sharing network
 - The sharing and exchanging information network captures a silent power structure of governance
 - Sharing and exchanging resources are higher levels of collaboration

Comparative study of Environmental Policy Networks Between Germany and Japan

Research Questions of the each studies

- 1. Basic comparative analysis
 - Who are influential actors in the each network?
 - What are the differences and similarities in the information exchange network?
- 2. Relationship between informational factors and resource-sharing networks
 - Do similarity factors in the informational dimension in governance influence resource-sharing networks in Germany and Japan?
 - Does the information sharing network in governance influence the resource-sharing networks in Germany and Japan?

1. Basic Comparative analysis of Environmental Policy Networks in Germany and Japan

Datasets and Questions

- Dataset: J-GEPON 2 (2012-2013) and G-GEPON 2 (2016-2017)
- Questions: Manipulating and integrating two questions (Q7 and Q8) into one matrix: Information-providing network

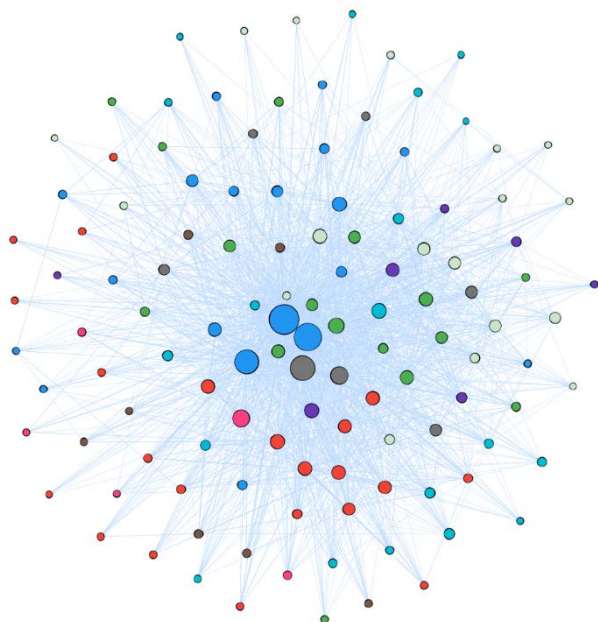
Information-sharing network

Q7. Please indicate all the organizations to which your organization provides information (including advice, joint workshops, etc.).

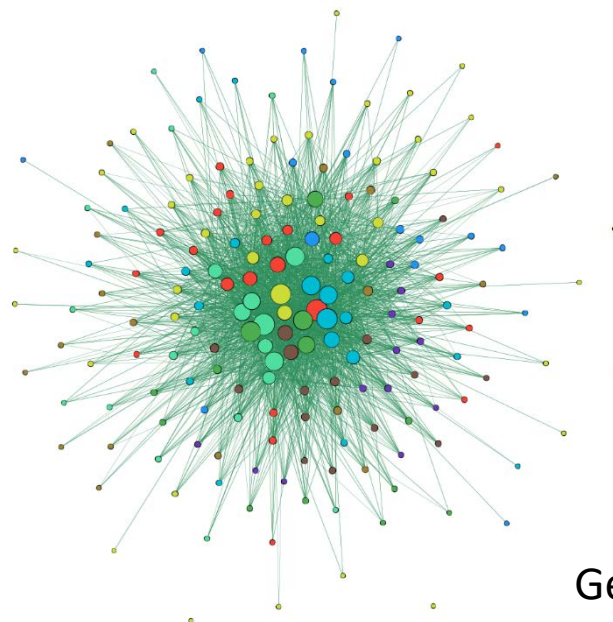
Q8. Please indicate all the organizations from which your organization receives information (including advice, joint workshops, etc.).

1. Basic Comparative analysis of Environmental Policy Networks in Germany and Japan

Background and Theoretical Approach



Japan



Germany

MAIN ACTORS : ● GOVERNMENTAL ACTORS ● ECONOMIC CORPORATIONS ● ENVIRONMENTAL CSOS ● BUSINESS ORGANIZATIONS ● RESEARCH FACILITIES (GERMANY ONLY) ● MASS MEDIA

1. Basic Comparative analysis of Environmental Policy Networks in Germany and Japan

Discussion

- Governments are still main actors in the governance
- Research facilities (Germany) and mass media (Japan) play a mediator role
- Germany
 - More varied organizations participate in the process
 - Network in Germany is more open to other types of actors
- Japan
 - Fewer NGOs work with the government & corporate actors
 - Government actors are strong information providers and NGOs are in the receiver position

2. Relationship Between information factors and Resource-Sharing Networks

Method, Datasets and Questions

- QAP
 - Quadratic assignment procedure is a nonparametric, permutation-based test that preserves the integrity of observed structures.
 - Rows and columns of the independent matrix or matrices and the dependent matrix are repeatedly permuted to recompute the regression to obtain random statistical results
 - We set 100,000 permutations.
- Datasets
 - J-GEPON 2 (2012-2013) and G-GEPON 2 (2016-2017)
- Questions
 - Six questions to generate 13 relational matrices for each country

2. Relationship Between information factors and Resource-Sharing Networks

Method, Datasets and Questions

Factors in the informational dimension

Q3. Similarity of information importance (4 matrices): International activities, domestic activities, science and technology, society and the economy

Q4. Similarity of information resource (4 matrices): International activities, domestic activities, science and technology, society and the economy

Q7, Q8. Information-sharing network (1 matrix)

Network structural effects (3 matrices): Reciprocity, transitivity, preferential attachment



Dependent variable

Q9, Q10. Resource-sharing network (1 matrix)

2. Relationship Between information factors and Resource-Sharing Networks

Results

	M1		M2		M3		M4		M5	
	Germany	Japan	Germany	Japan	Germany	Japan	Germany	Japan	Germany	Japan
International activities (I)	0.277	0.107					0.453	-0.157	0.076	0.302
Domestic activities (I)	0.070	0.536					-0.543	0.806	-0.965	0.687
Science and technology (I)	1.045**	-0.369					0.916*	-0.112	0.980*	-0.864
Society and the economy (I)	-0.344	1.063**					-0.250	0.853	-0.199	1.038
International activities (S)			0.233	0.563			0.202	0.539	0.116	0.467
Domestic activities (S)			0.030	0.063			-0.062	0.166	-0.075	0.398
Science and technology (S)			0.077	-0.159			0.051	-0.222	0.045	-0.240
Society and the economy (S)			0.304	-0.157			0.282	-0.130	0.089	-0.107
Information network					0.806**	4.291***			0.822**	3.718***
Reciprocity					3.286***	-0.135			3.242***	0.248
Transitivity					0.047**	0.012			0.049*	0.007
Preferential attachment					-0.034**	-0.008			-0.038**	0.006

2. Relationship Between information factors and Resource-Sharing Networks

Discussion

- Similarity factors in the informational dimension in governance do not influence the resource-sharing network in governance (Model 1, Model 2, and Model 4).
- Information-sharing networks influence the resource-sharing networks within the collaborative governance continuum in that lower-level networks influence higher-level networks (Model 3).
- The measures of reciprocal and transitive tendency increase the resource-sharing relations in the network, but preferential attachment leads to a negative effect in the resource-sharing relations in Germany. Structural effects in Japan **do not** show this tendency (Model 3).
- The results of model 5 (at least the German information-sharing network) show this tendency well, even if the Japanese results do not (Model 5).

The Twitter network of participating NGOs in Germany, Japan and South Korea in COP21

Background and Theoretical Approach

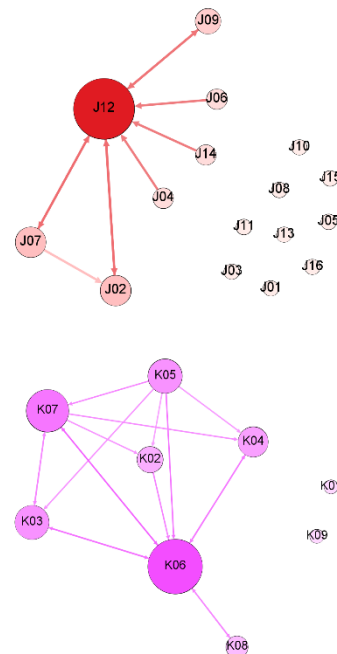
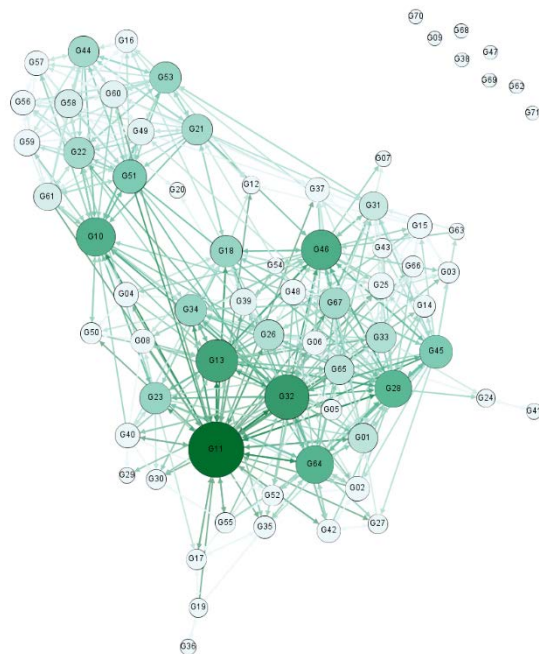
- International environmental regime
 - Environmental issues are one of the important international political issues that can threaten the peace and survival of humanity.
 - Since the 1970s when international environmental governance models started.
- NGOs in the international regime
 - NGOs have emerged with pluralism in international relations since 1990s.
 - Within the expansion of transnational civil society networks, networks are a very important and necessary concept for NGOs.
 - Participation in UNFCCC/COP
- Social media and NGO networks
 - New communication pattern
 - Ease of entry and information exchange
 - Negligible hierarchy

The Twitter network of participating NGOs in Germany, Japan and South Korea in COP21

Dataset

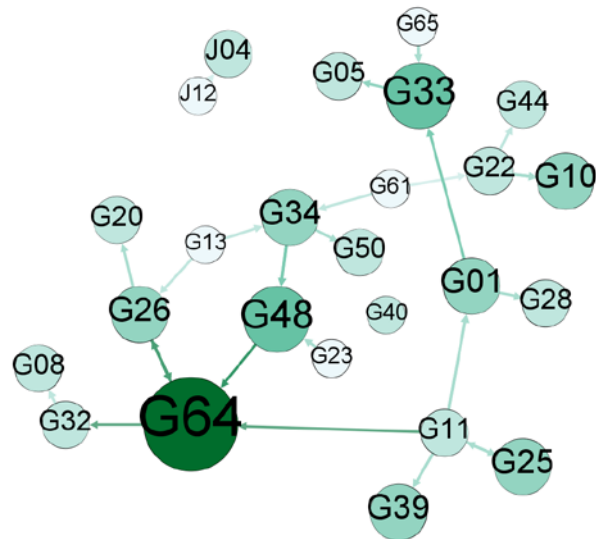
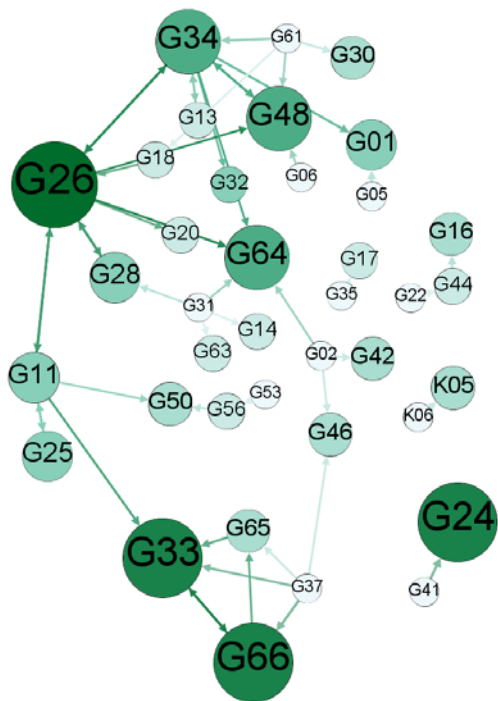
- Three matrices for each country (Germany, Japan and South Korea) and one integrated matrix of NGOs that participated in COP21
 - Following network
 - Retweet network (From August 1, 2015 to March 30, 2016)
- Data collection periods
 - From August 1 to September 30, 2016
- Numbers of Organizations and Twitter Accounts
 - Germany: 71 accounts / 125 organizations
 - Japan: 16 accounts / 55 organizations
 - South Korea: 9 accounts / 17 organizations
- Python and Nvivo, Gephi and Ucinet

Results



The Twitter network of participating NGOs in Germany, Japan and South Korea in COP21

Results



The Twitter network of participating NGOs in Germany, Japan and South Korea in COP21

Discussion

- Follow Network
 - Germany
 - Online network is more active than in Japan and South Korea
 - Online interaction is active and consistent
 - Japan
 - Very few activities in online networks
 - The number of NGOs participating in COP21 is about 3 times more than the number of organizations in Korea, but the online network is similar to and smaller than South Korea
 - South Korea
 - The smallest numbers of organizations and accounts
 - Isolated. Japan is geographically close but is not connected to neither Japan nor Germany in the online network
- Retweet Network
 - In the network of participants, more active during the period before COP21 than after COP21
 - Only one connection in Korea and Japan
 - The number of influential nodes in the follow network is similar to the retweet network

Social media strategies of governmental institutions

Background – RQ – Method – Data

Politicians/individual profiles have a higher popularity in social media than institutions (campaigning).

Institutions use social media to disseminate information.

→ Motives and means between individuals and institutions to facilitate social media profiles differ.

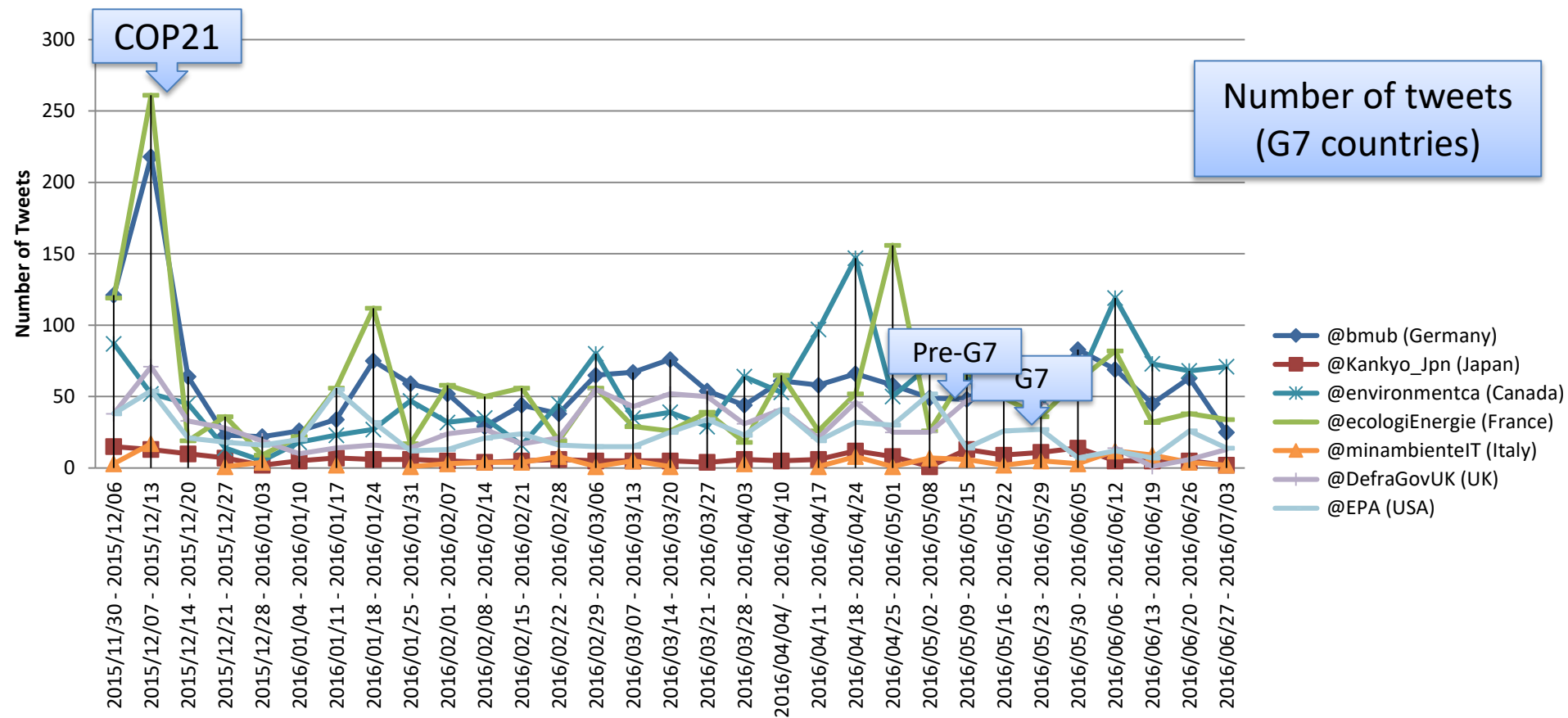
How do institutions communicate with the public?

Collecting Twitter profiles' tweets using Ncapture (Nvivo)

Content and semantic analysis

	@BMUB	@Kankyo_Jpn
Profile online since	July 2010	April 2011
Total number of tweets by October 27, 2016	8,388	1,331
Dataset size (number of available Tweets)	2,986	1,212
Number of tweets in the seven- month period	1,853	212
Date of oldest Tweet archived	Aug. 8, 2015	May 27, 2013
Number of followers by October 27, 2016	58,500	152,000
Number following by October 27, 2016	459	43

Social media strategies of governmental institutions

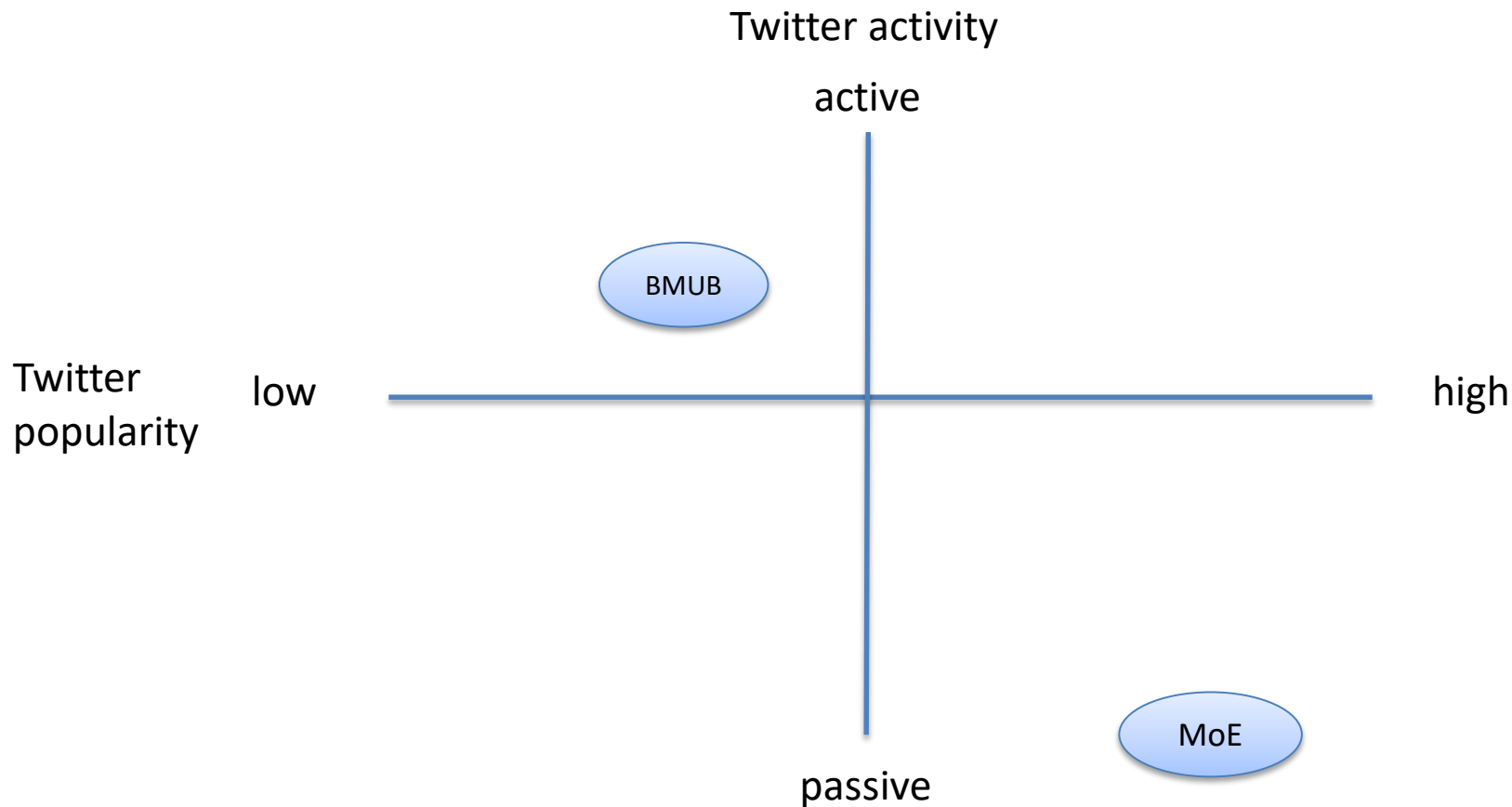


Impact rate:
Number of
followers in
relation to the
main population

Japan	Impact rate
Ministry of Defence (@bouei_saigai)	0.53
Ministry of Health, Labour and Welfare (@MHLWitter)	0.33
Ministry for Education, Culture Sports, Science and Technology (@mextjapan)	0.23
Ministry of Foreign Affairs (@MofaJapan_jp)	0.17
Ministry of Land, Infrastructure, Transport and Tourism (@MLIT_JAPAN)	0.13
Ministry of the Environment (@Kankyo_Jpn)	0.12
Ministry of Economy, Trade and Industry (@meti_NIPPON)	0.12
Ministry of Internal Affairs and Communication (@MIC_JAPAN)	0.10
Ministry of Finance (@MOF_Japan)	0.10
Ministry of Justice (@MOJ_HOUMU)	0.09
Ministry of Agriculture, Forestry and Fisheries (@MAFF_JAPAN)	0.03

Germany	Impact rate
Federal Foreign Office (@AsuwaertigesAmt)	0.56
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (@BMUB)	0.07
Federal Ministry for Family, Elderly, Women and Youth (@BMFSFJ)	0.06
Federal Ministry for Economic Affairs and Energy (@BMWi_Bund)	0.06
Federal Ministry of Defence (@bundeswehrinfo)	0.05
Federal Ministry for Economic Cooperation and Development (@BMZ_Bund)	0.04
Federal Ministry of Finance (@BMF_Bund)	0.03
Federal Ministry of Justice and Consumer Protection (@BMJV_Bund)	0.02
Federal Ministry of Food and Agriculture (@bmel)	0.02
Federal Ministry of Education and Research (@BMBF_Bund)	0.02
Federal Ministry of Health (@BMG_Bund)	0.02
Federal Ministry of the Interior (@BMI_Bund)	0.02
Federal Ministry of Transport and Digital Infrastructure (@BMVI)	0.02
Federal Ministry of Labour and Social Affairs (@BMAS_Bund)	0.01

Social media strategies of governmental institutions



Communication of climate change on social media

Background – RQ – Method – Data

“Communication about ‘the environment’ in and through a broad array of news, advertising, art and entertainment media is one of the major sources of public and political understanding of definitions, issues and problems associated with the environment.”

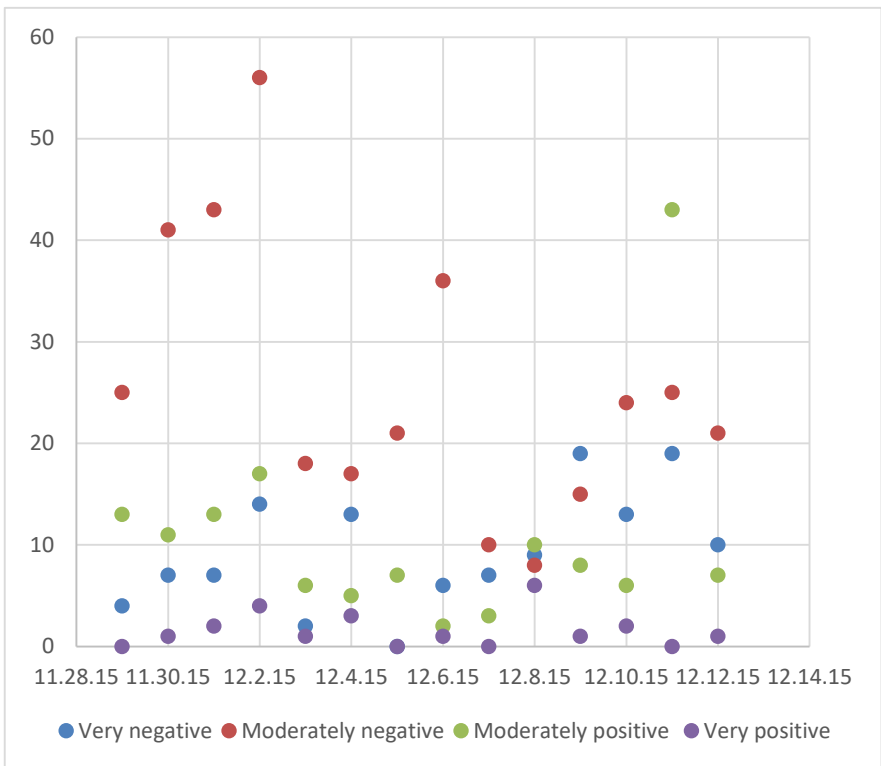
(Anders Hansen, 2010)

⇒ What can the local twitter contexts of “*Klimawandel*” and 気候変動 tell us about the cultural representation of the environment/public understanding of climate change?

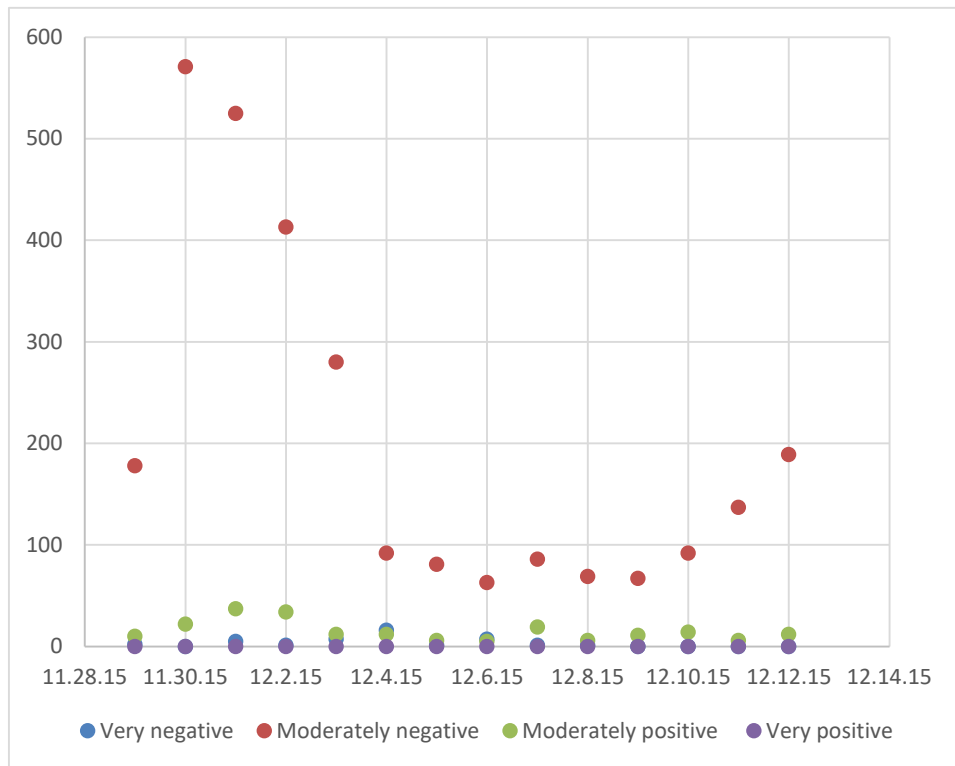
Collecting tweets (keywords) using Ncapture (Nvivo) **November 29 to February 2**; Merging and filtering the data sets for **November 30 to December 12**

Communication of climate change on social media

Sentiment Analysis



Klimawandel



気候変動

Communication of climate change on social media

Discussion

Germany:

- Ironic statements (climate change sceptics?)
- Local focus

Japan:

- Anti-nuclear
- Climate science acknowledgment
- Looking towards other countries

- Rich content in Japanese language tweets compared to German language tweets
- Climate change twitter community in Japan appears to be more knowledgeable, more engaged in sharing scientific knowledge about climate change than in Germany
- Climate change sceptics in Germany contribute to the online discussion more than in Japan
 - Perception: „Climate scientist“ is either a genius encompassing knowledge of the universe or a fool pursuing irrelevant goals“ (Legras 2013)
- Tweets in Japan have a longer life-span than in Germany
- Twitter community in Japan is more active than in Germany (in terms of retweets)
- Twitter is less significant in Germany than in Japan

Background – RQ – Data - Method

- Re-evaluation of “safe” nuclear energy worldwide
- Germany’s political reaction in the aftermath of Fukushima
- Japan’s outward look on other countries’ energy policy to determine domestic policies

⇒ How did Japan report on Germany’s energy policy decisions? E.g., have nuclear energy policies in other countries been singled out for own strategies or priorities? Evidence of international pressure (*gaiatsu*)?

Method & Data

- Time frame: March 11 to September 11, 2011
- Two keywords “nuclear energy” (*genshiryoku*), “political measures” (*seisaku*) in varying combination with OECD country names.
- Content analysis, semantic analysis

Newspaper	Articles covering nuclear energy policy (N)	Articles covering Germany in the context of nuclear energy policy (N, %)	Articles with Germany as main theme in the context of nuclear energy policy (N, %)
<i>Asahi</i>	1124	93 (8.3%)	22 (2.0%)
<i>Mainichi</i>	941	46 (4.9%)	7 (0.7%)
<i>Nikkei</i>	1005	73 (7.3%)	18 (1.8%)
<i>Yomiuri</i>	1116	51 (4.6%)	5 (0.0%)

- Asahi: ‘Reluctantly positive’
- Mainichi: ‘A Hollow Frame’
- Nikkei: Strong frame of Germany’s anti-nuclear green party to promote a pro-nuclear path in Japan
- Yomiuri: Renewable-Nuclear-Energy mix

Discussion

- Findings **do not** clearly **indicate** if news coverage of international nuclear power decisions exerted **pressure** on the DPJ's attempt to abolish nuclear energy or, in the larger picture, canalize international pressure on Japan to change its nuclear policy.
- Diversity in attitudes and opinions** in the coverage of Germany's experience.
- Diversity in the policy dimensions** in which the topic of nuclear energy policy is discussed.
- Framing theory suggests a way of constructing a frame of how one event influences how a topic is perceived by the audience and eventually affects political decision-making processes ⇒ **Here: it might be more appropriate to categorize what the frames do not include.** When assessing the quantitative news coverage of international nuclear energy policies and their influence on attitude change, the level of interest among the newspaper readership is a major factor.

Identifying the 'Fukushima Effect' ②

Background – RQ – Method - Data

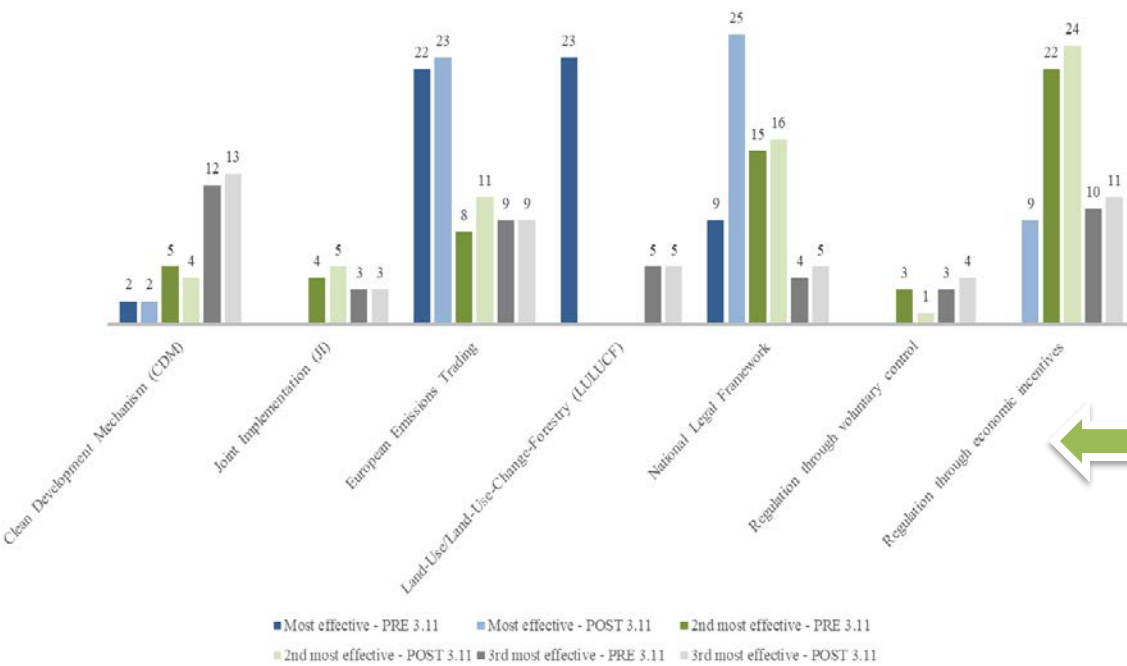
- Moving towards nuclear phase-out since 1990s/2000s
- “Phase-out from the phase-out” 2010
- Change of nuclear energy act and renewable energy act June 2011

⇒ How did Fukushima effect policy actors' opinions towards energy policy instruments, attitude towards the government's decisions on renewable energy policy?

G-GEPON 2 survey

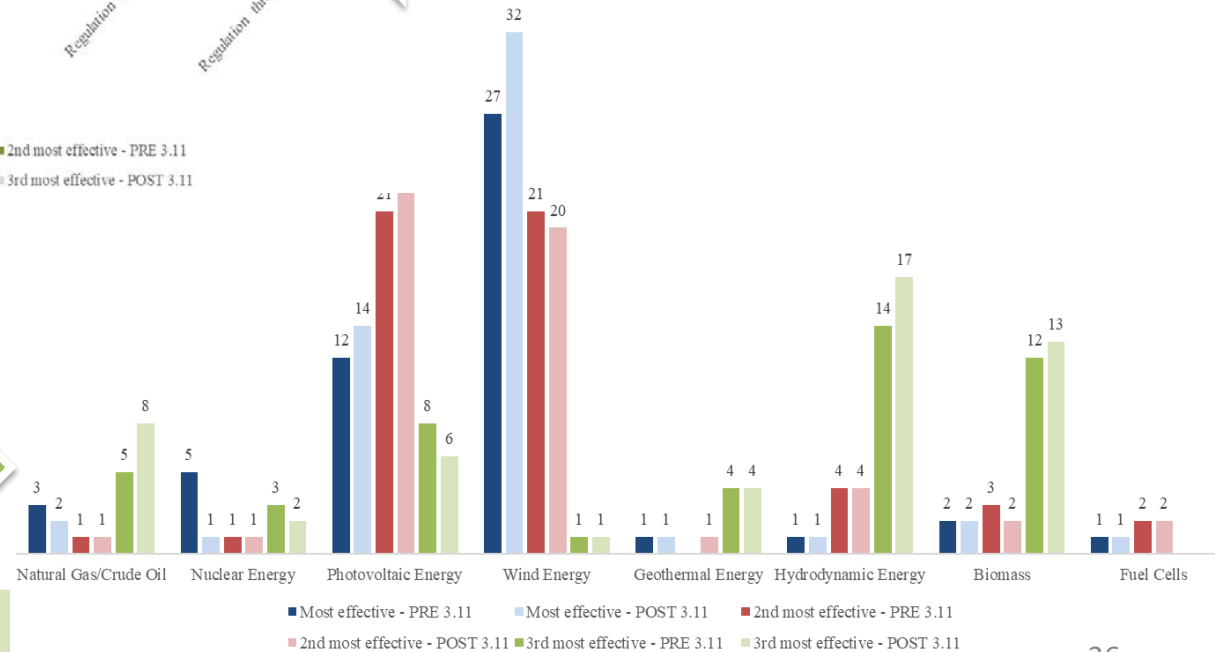


Identifying the 'Fukushima Effect' ②



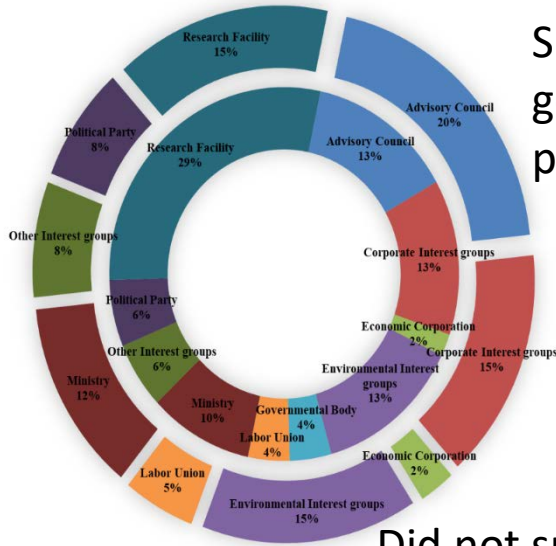
Effective policy instruments against climate change Pre-/Post-Fukushima.

Effective energy sources against climate change.

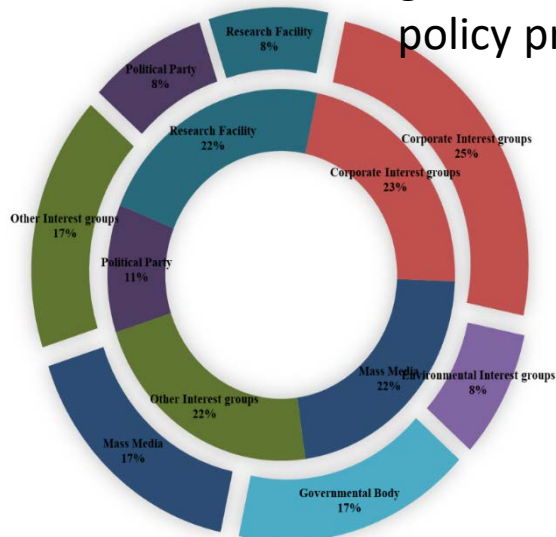


Identifying the 'Fukushima Effect' ②

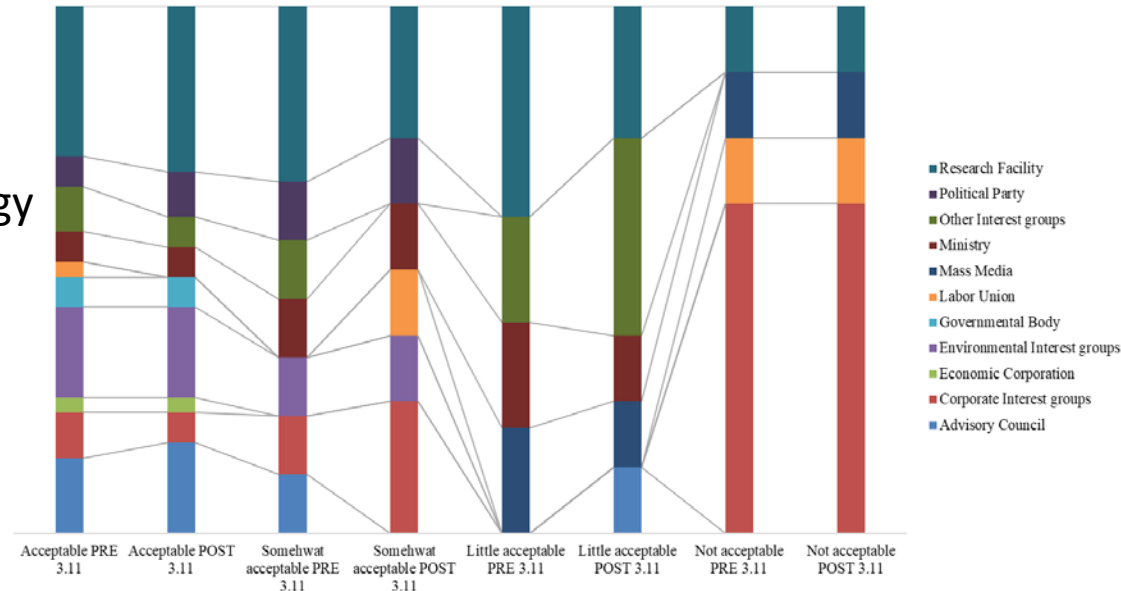
Support
government's energy
policy pre/post



Did not support
government's energy
policy pre/post



Acceptability of increased energy costs associated
with the promotion of renewable energy.



Outlook

- Survey results book (G-GEPON, J-GEPON surveys)
- Joint edited expanded book on social media/media and policy communication

Thank you.



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Results and Discussion

Asahi: 'Reluctantly positive'

Table 2 Attitude towards nuclear phase-out in the context of Germany's nuclear energy policy shift: *Asahi*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	100.0%	0.0%	0.0%
International	15.9%	34.6%	49.5%
Economy/Finance	0.0%	0.0%	0.0%
Politics	16.5%	49.1%	34.4%
Society/Culture	0.0%	0.0%	0.0%
Local	4.1%	0.0%	96.0%

Results and Discussion

Mainichi: 'A Hollow Frame'

Table 3 Attitude towards nuclear phase-out in the context of Germany's nuclear energy policy shift: *Mainichi*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	0.0%	100%	0.0%
International	0.0%	39.3%	60.74%
Economy/Finance	0.0%	100.0%	0.0%
Politics	0.0%	52.7%	47.3%
Society/Culture	0.0%	0.0%	100.0%
Local	0.0%	0.0%	100.0%

Results and Discussion

Nikkei: Strong frame of Germany's anti-nuclear green party to promote a pro-nuclear path in Japan

Table 4 Attitude towards nuclear phase-out in the context of Germany's nuclear energy policy shift: *Nikkei*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	0.0%	50.3%	49.7%
International	0.0%	54.3%	45.7%
Economy/Finance	0.0%	0.0%	100.0%
Politics	17.4%	48.6%	34.0%
Society/Culture	0.0%	0.0%	100.0%

Results and Discussion

Yomiuri: Renewable-Nuclear-Energy mix

Table 5 Attitude towards nuclear phase-out in the context of Germany's nuclear energy policy shift: *Yomiuri*

Section	Nuclear phase-out positive (percentage of articles)	Nuclear phase-out negative (percentage of articles)	Nuclear phase-out neutral (percentage of articles)
Opinion/Commentary	49.4%	0.0%	50.6%
International	0.0%	0.0%	100.0%
Economy/Finance	70.1%	0.0%	29.9%
Politics	0.0%	67.1%	32.9%
Society/Culture	0.0%	0.0%	100.0%
Local	0.0%	0.0%	0.0%