

Mediatized Environmental Governance: The Normalization of Waste-classification Policy in China

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Under the urgency of garbage siege, China initiated a waste-classification policy advocacy that aims to reduce the harm of waste disposal recently. Yet to ensure an enforced implementation across the nation, the traditional command-and-control administrative pattern encounters problems. In this study, topic modeling and social network analysis of Weibo reveals a new pattern of environmental governance in which mediatization plays a central role. First, the communication among the mainstream, social media, public-opinion leaders, and average citizens disrupted and reversed the assumed sequence of the normalization process of policy, therefore overcoming the rigidity of the command-and-control model of governance. Second, mediatization helped to realize the translation from questioning, mocking to understanding of the policy, which smoothed the usually state-driven, hierarchical normalization process. The significance of mediatized governance is discussed.

Keywords: mediatized environmental governance, social media, waste classification, normalization process, topic modeling

Waste pollution has become a worldwide problem, especially in China, where rapid and dramatic urbanization and mass consumption have exacerbated the waste increase. In recent years, two-thirds of cities in China are facing "garbage siege" (Zhang & Li, 2011), yet waste disposal in China is insufficient and lacks effective regulation, with 52% landfill, 45% incineration, and 3% recycled by composting techniques, and so on (Khan, Anjum, Raza, Bazai, & Ihtisham, 2022).

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To reduce waste and enhance resource recycling and innocuous treatment, the state promulgated a series of policies to normalize waste classification. In 1996, the Dachengxiang Community of Beijing became the first community to pilot waste classification in China. In 2000, the former Ministry of Construction issued the Announcement of Pilot Cities for Household Waste Classification and Collection, which designated Beijing, Shanghai, Guangzhou, Shenzhen, Hangzhou, Nanjing, Xiamen, and Guilin as pilot cities for household waste classification and collection, officially marking the beginning of China's waste classification and collection. Subsequently, China continued to issue relevant policy documents, including the Implementation Plan of Household Waste Classification System and the Notification on Accelerating the Classification of Household Waste in Key Cities.² Not until July 1, 2019, however, when Shanghai became the first city to adopt a mandatory waste classification, did the policy trigger heated discussion and have formal implementation (Shao & Xie, 2020). On May 1, 2020, Beijing also implemented waste classification. By the end of 2022, the average coverage of waste classification in 297 urban residential areas at prefecture level and above has reached 82.5%, and China's eventual plan is to fully implement the policy by the end of 2025.³

Since the waste-classification policy faced many challenges, such as criticism of policy rationality and clarity and the public's unwillingness to adopt because of inconveniences in daily life, the government leveraged the media to normalize the policy by explaining classification standards and operational instructions, and educating and mobilizing the public. This move offers empirical opportunities to develop insight into the relationship between mediatization and governance, which surpasses the traditional view of media as simply a tool for governance or management. Instead of asking how media serve administration, we ask how the governance logic interplays with the media logic in a much more complicated way: How does the dynamic process of policy normalization evolve through the communication network? In what ways do participants in social media contribute to the normalization process? To what extent has the mediatized normalization process resulted in favorable agreement to the policy, as the government might have expected?

To answer these questions, this study uses topic modeling with BERTopic and social network analysis to reveal the mechanism of the mediatized normalization process of the waste-classification policy. We will start with a review of the transitional environmental governance in China, then introduce the specific steps of the normalization process, and finally explain the impact of mediatization on environmental governance.

China's Environmental Governance in Transition

Environmental governance refers to a set of norms and rules aimed at defining, constraining, and shaping actor expectations and behaviors over the use and management of natural resources, generally

² "Looking back together, the history of garbage classification in China (April 4, 2023)." Retrieved from <https://xfj.km.gov.cn/c/2023-04-03/4714183.shtml>

³ "Did you sort your waste today? Ministry of Housing and Urban-Rural Development: By 2025, we will basically achieve full coverage of waste classification (May 23, 2023)." Retrieved from https://www.mohurd.gov.cn/xinwen/gzdt/202305/20230523_772319.html

implemented through a set of mechanisms recognized as legitimate by relevant actors (stakeholders). While governance is habitually associated with official regulation by the state, a mode of nonhierarchical, multistakeholder decision making process has been emphasized under the circumstances of political modernization (Mol, 2002). Globally, non-state institutions in the market and civil society are increasingly considered to be equally important as the state, about policy making, norm-setting, implementation, and other aspects of governance. The International Union for Conservation of Nature (IUCN), for example, has defined environmental governance as the multilevel interactions among three main actors (i.e., state, market, and civil society, in “formulating and implementing policies for attaining environmentally sustainable development”; as cited in Cheng & So, 2015, p. 298).

Contrary to this multistakeholder mode, however, for decades—since the set of new China in 1949—the state apparatus has taken such a central role in environmental governance that it is considered to be an “Environmental State,” characterized with “a strong focus on central state authority and especially the Communist Party of China (CPC) with restricted freedom of maneuver for both decentralized state organizations, para-states, and private organizations,” as well as limited involvement from civil society (Mol & Carter, 2006, p.151).

It was not until the 1990s, when the takeoff economy exacerbated environmental pollution and risks, that the rigid, hierarchical, command-and-control system became more decentralized and flexible under challenge (Mol & Carter, 2006, p. 155). After all, environmental governance depends not only on the state’s enforcement of laws, institutions, and regulations but also on private entities’ self-regulation, fostering of innovation, arbitration, and dispute resolution, as well as civil society’s awareness-raising, capacity-building, and promotion of public interest objectives. Under such circumstances, environmental governance has increasingly relied on media, in the process of which the integration of governance logic and media logic has emerged.

The Integration of Governance Logic and Media Logic in Environmental Advocacy

Media has played an indispensable role in advancing environmental governance in China, since the environmental state used media as a major advocacy channel for policies and activities. The top-down state-driven environmental movement usually involves administrators’ coordination and positive propaganda in news coverage, for promoting sustainable development, popularizing science and policy, or raising the public’s awareness of the environmental protection (Zeng & Dai, 2015).

The hierarchical, top-down governance model through media started to face challenges in the mid-1990s, when the large-scale growth of environmental NGOs (nongovernmental organizations) and the urban middle class brought forth messages from civil society, along with the media’s rapid development itself (Dai & Zeng, 2022). Multiple stakeholders compete, negotiate, and communicate with one another for advocacy activities to create a significant impact on public awareness and behavior, policy arrangements, and societal development, although the state-led governance still remains dominant (Howlett, 2009).

The study of Dai and Zeng (2022) provided empirical case analysis about the competition and negotiation in environmental advocacy among multiple stakeholders through the media, including the public,

media, experts, NGOs, and government. The public, for example, promoted environmental awareness and action through strategies such as rumors and large-scale protests against risky projects; media strategically framed risk issues under the influence of factors such as ideology, commercial interests, and professionalism; experts sometimes improved but sometimes hindered the public's understanding of environmental problems; and the government applied normative, cognitive, and regulatory controls as mechanisms of co-optation in handling protests and tackled problems about conflicts between the central and local governments. In addition, advocacy from the market has shown great social impact. The e-commerce platform Alibaba's Alipay "Ant Forest" project illustrated how low carbon e-payment was converted into actual carbon reduction or afforestation (Tong & Sun, 2022).

Thus, China's environmental governance and its transition are inseparable from the role of media-based multiple-stakeholder advocacy (Li & Weible, 2021), regardless of whether media functions as a governmental propaganda apparatus or as nongovernmental actors' toolkits, platforms, or logics of environmental curation and participation. Empirical evidence suggests that the information dissemination and mobilization capabilities of social media have changed the relationship between the central and local governments, as well as between the state and the people (Zhou, 2014), and that critical news reporting has been leveraged as a governance technique to the extent that it is not so much a media behavior as a government behavior (Sun, 2002).

In this sense, media takes a central position in transforming governance by government to governance by the collaboration of multiple actors (Yan, Pan, & Wu, 2020). In the following section, we will discuss how the normalization process of waste-classification policy was mediatized, resulting in the successful adoption of the policy across China.

The Mediatized Normalization Process of Policy

Before an innovative policy is widely adopted, it usually goes through a normalization process that promotes or inhibits the implementation, embedding, and integration of new techniques, technologies, and other complex interventions (May et al., 2009, 2022). In this regard, Normalization Process Theory (NPT) is relevant and applicable to the study of newly promulgated waste-classification policies: First, it provides a theoretical framework and toolkit for identifying, characterizing, and explaining key mechanisms that led to the adoption of the new policy (Kaler & Ruston, 2019; May et al., 2009, 2022), especially how the competition of interests and values among multiple stakeholders impacts the implementation. Second, as NPT is also useful to reveal complex social factors that affect policy implementation (Gask, Coupe, & Green, 2019), it suits to illustrate the particularity and complexity of policy implementation in China characterized with "limited decentralization" (e.g., lack of policy argumentation based on local interests) and "relationship-led" (rather than rational-led) administration (Gong, 2008). NPT may help to reveal how complication, deviation, and uncertainty happen, and what strategies were taken to effectively solve them.

The normalization process of a policy usually includes four constructs: Coherence, cognitive participation, collective action, and reflexive monitoring. The four constructs are assumed to go in sequence, and each of the foregoing steps is the precondition of the latter one (May & Finch, 2009; May et al., 2022).

In the following sections, we explain how the normalization process is mediatized through the interaction among multiple stakeholders.

Creating Cohesive Environmental Discourse

Coherence stresses on what people do to make sense of the policy. It is realized by a set of ideas about the policy's meaning, uses, and utility, and by socially defined and organized competencies (May & Finch, 2009; May et al., 2022). Consistency and cohesiveness are often emphasized on policy release to ensure sense-making, sharing, and enactment of policies among people who are faced with the problem of operationalizing some sets of practices (Lloyd, Joseph-Williams, Edwards, Rix, & Elwyn, 2013; May et al., 2009).

As the central apparatus of environmental governance, the state uses the media to carry out positive public-opinion guidance and emphasize the government's accountability (Ran, 2015). Studies found that in recent years, governments have adopted social media to collect public feedback (Oliveira & Welch, 2013), supervise local governments, and ease out disagreements (Meijer & Thaens, 2010). As a result, the media helped reduce the confrontational nature in the policy interpretation and implementation process, and bridged dialogue and partnership between the state and the public (Vakeel & Panigrahi, 2018).

Raising Awareness and Building Capacity

Cognitive participation refers to what people do to initiate and be enrolled in delivering an ensemble of practices (May et al., 2009, 2022) and to realize that involvement is not only necessary but also reasonable (Kaler & Ruston, 2019). Essentially, the process is to build and sustain a community of practice by engaging groups and individuals (May & Finch, 2009).

Since social media facilitate the organization of a flexible social network (Bennett, Segerberg, & Walker, 2014), they have been proven helpful in awareness-raising and capacity-building (knowledge, training, and skill sharing). The interest and opinions expressed through social media, whether consistent or not, form a relational work for a given policy debate (Tufekci & Wilson, 2012; Xu, 2014).

Organizing Collective Action

Collective action comes into being when operational work is carried out to enact a set of practices with a specific goal within a group (May et al., 2009, 2022), usually expressed on a collective scale (Gask et al., 2019).

Social media have successfully facilitated network building, brought perspectives of marginalized groups, and organized public protests (Liu, 2016). For instance, collective identity and political involvement in anti-air pollution activism were realized through informal and diffused means of collective action (Xu, 2014). In the sense that collective action is motivated and organized by the connectivity realized through social media, collective action has transformed into connective action, with large-scale heterogeneous social networks enabling personalized participation (Bennett & Segerberg, 2012).

Facilitating Policy Reflection and Political Pressure

Reflexive monitoring refers to what people do to appraise the consequences of a new practice (May et al., 2009, 2022). It includes not only systematization—the methodological formality of the judgments about the utility and effectiveness of the practice and the rationalities but also reconfiguration—subversion, modification, or reconstruction of existing policies (Lloyd et al., 2013; May & Finch, 2009).

Social media creates avenues to facilitate policy reflection and political pressure when whistleblowers such as environmental NGOs and public intellectuals or indigenous communities expose risks and express interest appeals (Dai, Zeng, & Wang, 2017), and held the involved political and market forces accountable (Tufekci & Wilson, 2012). They therefore created an opportunity for competition between civic and official discourse (Dai, Zeng, & Wang, 2014), which pressed the government to reflect on and adjust policy to ensure social responsibility and the practice of good governance.

Although these mediatized mechanisms suggest that media has played a significant role in the normalization of environmental policies historically, very few studies have explicated the exact process of normalization of a given policy under the social media circumstance, in terms of advancing governance—forming a cooperative and sustainable network of actions (Du & Huang, 2019). This leaves a gap that this study aims to fill through the following analytical framework (Figure 1):

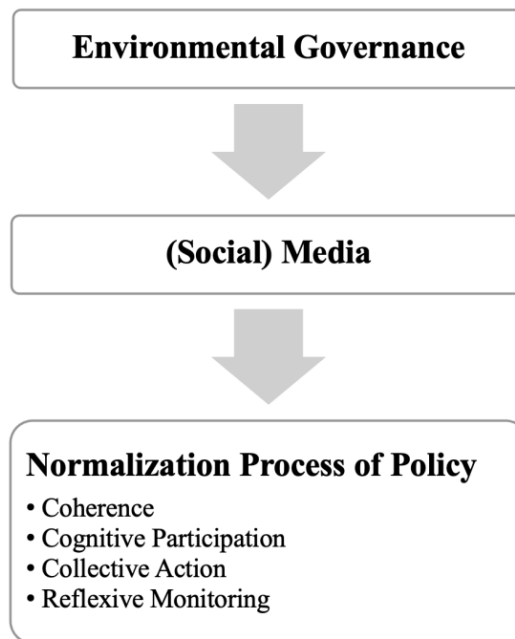


Figure 1. Analytical framework of mediatized environmental governance.

Admittedly, this analytical framework appears to be better applicable to policy implementation in democratic contexts, where policy promulgation usually involves public debate and concrete measures, and expression through media is normally not directly intervened by politics. Although this is not entirely the case in China, this framework fits into the present study about the de facto roles media have played in Chinese policy processes (Ran, 2015). In the anti-waste-incineration protest in Panyu, Guangzhou, in 2009, for example, media orchestrated in advancing negotiation among the multiple stakeholders: state-run media promoted the technological progressivism and endorsed incineration; market-oriented media mobilized consumer and citizen movements against incineration (Nie & Wang, 2012); opinion leaders increased anti-incineration expression through their own blogs (Zeng, 2015). Under this circumstance, we believe that even in the nondemocratic contexts of Chinese policy implementation and governance, the significance of social media cannot be underestimated and left unsearched. Thus, the following questions are raised:

RQ1: How was the normalization process of waste-classification policy mediatized through social media?

Since active participants and the resources they access are key to the success of the policies and the contribution mechanism of participants is the focus of NPT (May et al., 2009), we are also interested in how social media organizes participation effectively. So, we ask:

RQ2: How was participation in the policy normalization process mediatized through social media?

In addition, we are also interested in the impact of the mediatized process on the policy, so we ask:

RQ3: To what extent does the mediatized normalization process result in a favorable agreement?

Method

Data Collection

To explore the multistakeholders' communication around the newly issued waste-classification policy, we selected posts from the popular social media of Weibo. Weibo is deemed to be the most important social medium in China (Huang & Sun, 2014), with an open and interactive structure that enables users with great diversity to communicate on prominent issues.

Keyword searches of "Shanghai waste classification [上海垃圾分类]" on Weibo from June 3, 2019 (the day President Xi Jinping gave important instructions to garbage classification and triggered policy discussion on Weibo) to July 14, 2019 (two weeks after Shanghai announcement of mandatory waste-classification policy on July 1, 2019), retrieved a total of 221,252 Weibo posts. Although the six-week time window did not achieve the desired full duration of the normalization process, it covered all four essential steps of the process and highlighted the most discernible patterns of the issue debate. The presence of media (official, market-oriented, and social), public intellectuals, opinion leaders, and other stakeholders represented active participation in the issue debate. The heat of the issue began to decline afterward, as

the number of reports and posts decreased. Therefore, we consider that the six-week period is valid and sufficiently representative of the time through which dominant patterns of discussion about the waste-classification policy emerged.

We then compared the number of reposts of these posts to identify the most influential ones. Our rationale was that the number of reposts was an appropriate measure of expressive participation (Pang & Law, 2017) and an approach to building a network and dialogue around an issue. In the meantime, accounts with more reposts were considered more visible, influential, and dominant (boyd, Golder, & Lotan, 2010). Thus, we set the baseline of reposts to a post as five times and above to select the most important posts. Eventually, 8,848 posts were selected.

Operational Measurement of the Normalization Process

Operational measurement of the normalization process was composed of two steps: First, we used Python for word stopping and word segmentation. Then, we used BERTopic (Grootendorst, 2022) to classify many extracted texts. As a topic modeling algorithm based on the BERT (Bidirectional Encoder Representations from Transformers) model, BERTopic can aggregate large-scale text data into a group of topics and generate a representative keyword for each topic. BERTopic uses a pretrained BERT model to generate text vector representations and weighs the text using a word-frequency inverse document-frequency (TF-IDF) technique. Then, by applying the HDBSCAN (Hierarchical Density Based Spatial Clustering of Applications with Noise) clustering algorithm, BERTopic can cluster similar texts together to form a topic. Compared with traditional LDA (Latent Dirichlet Allocation), BERTopic does not require specifying the number of topics in advance but automatically determines the optimal number of clusters. This makes BERTopic suitable for topic modeling on large-scale but short social media texts without prior knowledge. Meanwhile, because BERTopic categorizes a Weibo post to a single topic rather than multiple topics based on word cooccurrence, it is more concise than LDA, which typically categorizes text content under multiple topics. Through BERTopic, we obtained 18 topics (0–17). The smaller the order number of topics, the larger the proportion of text (number of Weibo posts) on the topic in the overall text.

Next, to simplify and visualize the topics, we categorized the 18 topics into the four constructs of the normalization process based on the coding framework drawn from NPT (Table 1). Then, we checked the 10 keywords of each topic generated by BERTopic to assess if our preliminary categorization was appropriate and accurate. Finally, to ensure the reliability of the topic modeling conducted by BERTopic algorithm, two coders also manually coded 10% of randomly selected Weibo posts and labeled one of the four normalization steps for each post: Coherence (coded as "1"), cognitive participation (coded as "2"), collective action (coded as "3"), reflective monitoring (coded as "4"), and others (coded as "99"). After calculating the inter coder reliability test (Cohen's Kappa = 89.6%), the reliability test (Cohen's Kappa = 85.1%) was also performed on the results of manual coding and BERTopic topic modeling to ensure the reliability of the results.

Table 1. Coding Sheet of Normalization Process (May et al., 2022)

NPT constructs	Concepts
Coherence	Define the goal of the policy and construct its significance
Cognitive participation	Recruit participants, organize, rationalize and expand the community of implementers of policy
Collective action	Collective or organizational examples, behaviors and methods
Reflexive monitoring	Evaluation and interpretation of the policy and relevant knowledge, critiques to press government to reconfigure policy

Social Network Analysis

Because the participants and their resources are key to the normalization process (Matland, 1995) and the contribution mechanism of actors is also the focus of the normalization process theory (May & Finch, 2009), we also employed social network analysis to explore actor participation in the normalization process. Since social network analysis was used in a previous study to identify key actors and their substantive contributions in collaborative governance (Carboni, Siddiki, Koski, & Sadiq, 2017), it should shed light on how mediatized participation through networks was formed and developed.

Since repost is the most ostensible sign of interaction (Murthy & Longwell, 2013), we created a relationship subset for those significant participants who had the highest number of reposts. Inspired by previous studies, we identified and located the at sign (“@”) to generate such a relationship.

Then we loaded the data into Gephi to visualize the network. We described the network structure through nodes and edges. The sizes of the nodes are proportionate to weighted in-degree, which is calculated by the number of edges that others have initiated with the nodes. Therefore, a node with a higher weighted in-degree means it has successfully gained a great amount of attention from other participants (Himmelboim & Golan, 2019). The repost is regarded as an edge that represents the logarithm of two interacting nodes in the network. Finally, we visualized the 10 nodes with the highest weighted in-degree.

Measuring the impacts

To measure the response to the issue debate, we used the number of “likes” as indicators of communication effects (Wang, Zhao, & Yuan, 2017). In previous studies, a “like” was regarded as a sign of satisfaction and a supportive interaction by the users (Gan, 2017). To track the trend of “likes,” we calculated the means of “likes” to posts on each day (the sum of likes to all posts per day/the number of posts per day).

Since the success of policy implementation depends on participation, it is important for participants to remain in the issue debate. Inspired by the method adopted in Choi, Yang, and Chen’s study (2018), we calculated the number of participants on any given day (t_1 participants) and the next day (t_2 participants). We also calculated the number of new participants and the number of lost participants the next day. Eventually, we were able to calculate the change ratio of participants through the following formula:

$$\text{Change ratio} = (\text{new participants} + \text{lost participants}) / (t_1 \text{ participants} + t_2 \text{ participants})$$

Findings

Mediatized Normalization Process of Policy

To answer RQ1, "How was the normalization process of waste-classification policy mediatized through social media," we first categorized the 18 topics that emerged from the BERTopic modeling process into the four constructs of NPT (Tables 2, 3, 4, and 5). As Table 2–5 shows, coherence (Topics 7, 8, and 9) emphasized the significance and value of the waste-classification policy; cognitive participation (Topics 0, 3, 11, 14, and 15) emphasized the rules of enforcing waste classification in cities such as Shanghai and Beijing, and guidance of the perception and action of the residents. The collective action (Topics 4, 5, 12, 13, and 17) mainly demonstrated episodes of the practical implementation process, characterized by mocking discourse; reflexive monitoring (Topics 1, 2, 6, 10, and 16) included interpretation, satire, assessment, and criticism of the policy.

Table 2. Topics about Coherence

Topic	Top 10 Keywords
Topic 7	Promise[承诺]; great country[大国]; Shanghai[上海]; start from me[从我做起]; heavy[沉重]; hurry[着急]; cost[代价]; at last[最终]; throw away[丢弃]; production[生产]
Topic 8	Heavy[沉重]; cost[代价]; Shanghai[上海]; at last[最终]; great country[大国]; throw away[丢弃]; hurry[着急]; readily[随手]; China[中国]; carry out[推行]
Topic 9	Japan[日本]; both[两手抓]; Mexico[墨西哥]; measured[按量]; incorporate[收编]; private[私人]; meticulous[细致]; United States of America [美国]; fee charging[收取]; 盘点[check]

Table 3. Topics about Cognitive Participation

Topic	Top 10 Keywords
Topic 0	Year-end [年底]; system [系统]; completed [建成]; 2020; 46; cities [城市]; advance [先行]; ministry of housing and urban-rural development [住建部]; investment [投入]
Topic 3	Standard[标准]; Shanghai[上海市]; classification[分类]; legislation[立法]; below[低于]; promote[推动]; Beijing[北京]; error[有误]; genuine[正版]; official announcement[官宣]
Topic 11	Chengdu [成都]; draft [草案]; Chengdu city[成都市]; wet and dry[干湿]; solicit opinions[征求意见]; at once[一口气]; long exhale[长舒]; public[公开]; kitchen[餐厨]
Topic 14	Fine[罚款]; garbage[垃圾]; throw incorrectly[扔错]; intensity[力度]; strong force[强力]; rhythm[节奏]; prohibition[禁令]; traffic[交通]; strict[严格]; classification[分类]; instant[瞬间]
Topic 15	Tourists[游客]; foreign[外籍]; nonlocal[外地]; administrative[行政]; area[区域]; comply[遵守]; territorial[属地]; local[地方性]; principle[原则]; regulation[条例]

Table 4. Topics about Collective Action

Topic	Top 10 keywords
Topic 4	Collect[代收]; online gig workers[网约工]; emerging[新兴]; occupation[职业]; online[线上]; give birth to[催生]; waste[废品]; appointment[预约]; monthly income[月入]; tens of thousands[上万]
Topic 5	Participate[参与]; takeout[外卖]; milk tea[奶茶]; no need[无需]; cups[杯子]; orders[订单]; month-on-month[环比]; 149%; growth[增长]; wash[洗洗]
Topic 12	Urban management[城管]; law enforcement[执法]; penalty ticket[罚单]; department[部门]; 190; issue[开出]; one week[一周]; inspection[检查]; report card[成绩单]; case[案件]
Topic 13	Purchase limit[限购]; sales volume[销量]; per person[每人]; only[只能]; one[一件]; boost[带火]; stores[店铺]; trash can[垃圾桶]; month[月份]; sell out[卖断]
Topic 17	Scavenging[拾荒]; 900; skills[技能]; Master Zhang[张师傅]; residential areas[小区]; homeowners[业主]; neat[整洁]; Changning District[长宁区]; Xinhua[新华]

Table 5. The Topics about Reflexive Monitoring

Topic	Top 10 keywords
Topic 1	Comments and repost[转评]; formalism[形式主义]; find[找点]; not interrupted[没断]; middle level[中层]; peak[上峰]; omit[省略]; 1500; grassroots[底层]; practical[实干]
Topic 2	Drive crazy[逼疯]; residents[居民]; bags[包包]; Weibo[微博]; game[游戏]; force into[逼成]; Shanghainese[上海人]; funny[搞笑]; panda[熊猫]; Wang Zhe[王哲]
Topic 6	Shanghai Bund[上海滩]; become popular[走红]; Internet[网络]; self-created[自创]; old songs[老歌]; wet and dry[干湿]; one bucket[一个桶]; hot discussion[热议]; netizens[网友]; divine song[神曲];
Topic 10	Tour around[游山玩水]; Shen Wei[沈巍]; master[大师]; Shanghainese[上海人]; Kanas[喀纳斯]; Xinjiang[新疆]; magical[神奇]; congratulatory message[贺电]; circulate in turns[轮流转]
Topic 16	Zhu Guangquan[朱广权]; comedian[段子手]; taste test[试吃]; pig[猪]; can eat[能吃]; not eat[不吃]; human garbage[人类垃圾]; dry[干]; wet[湿]

The mediatization of the normalization process is reflected by the fact that the patterns of the four steps changed compared with the assumed sequence of NPT. First, all four steps run through the whole process, nearly in a parallel pattern (Figure 2). In other words, four steps were involved in most of the days, presenting no clear-cut boundaries between each other as NPT has indicated.

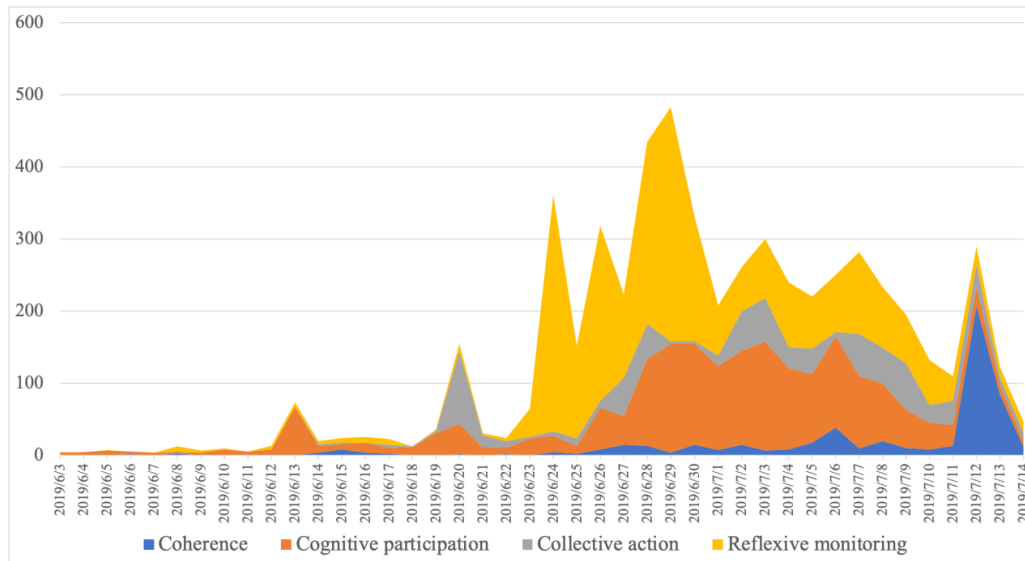


Figure 2. The chronological distribution of normalization process.

This mediatization of the normalization process can be attributed to the social media scenario, in which multiple stakeholders participated in policy discussions according to their own interests and cognitive norms rather than blindly implementing the policy. For example, Topics 6 and 9 showed a mockery of the ambiguity of garbage-sorting standards, where participants used a spoof of the popular song “The Shanghai Bund[上海滩]”⁴ and the cartoon image of Peppa Pig[小猪佩奇]⁵ in commenting on the policy.

Mediatized Participation Through Network

To answer RQ2, “How participation in the policy normalization process was mediatized through social media,” we conducted the following analysis of data. First, since the information volume reached the highest in the time of “peaks” (6/13, 6/20, 6/24, 6/29, and 7/12, as shown in Figure 2), we inferred that the most contributive participants of the networks could be identified from these “peaks.” We then used social network analysis to identify the most contributing participants (the hubs) in the networks for each of the “peaks.” During this process, we found that a few participants contributed most of the traffic, denoting

⁴ “Shanghai Bund” is the theme song from the Chinese TV series “Shanghai Bund,” which tells the story of the gang struggle that happened in Shanghai in the 1930s. Netizens combined the policy with the melody and images of the song and produced a satiric text deconstruction, denoting that the waste classification policy in Shanghai caused substantial inconveniences to daily life, just like the gang struggles that historically caused turmoil in Shanghai.

⁵ Netizens used Peppa Pig, the cartoon image, to interpret the official garbage classification standards that were deemed vague and ambiguous. Specifically, whether “pigs can eat or not” became a simpler and clearer criterion in distinguishing dry and wet garbage. Therefore, it represents a mockery of policy ambiguity by the netizens.

their significant roles in the network. For example, a post by Xinhua.net[新华网] on June 13 was reposted in large numbers, contributing more than half of the entire network’s traffic (50.38%). For the convenience of analysis, therefore, we identified the top three participants (measured by the number of reposts of their posts) on each of the peak days. The top participants included state-run media, market-oriented media, central ministries, opinion leaders, and grassroots. Second, we retrieved all the reposts of these top participants on each of the peak days (35,370 in total) and calculated the proportion of the number of reposts of the posts against the total amount of reposts of that day to illustrate the contribution of these top-ranked participants (Figure 3). Finally, we used Gephi to visualize the participants network (Figure 4-8), with the 10 actors of the highest measured in-degree in each network labeled.

The four steps of the normalization process appeared in an even more unexpected sequence. As shown in Figure 3, the number of posts on cognitive participation first reached a peak (6/13), followed by collective action (6/20), and then by reflexive monitoring (6/29). The step of coherence, which was assumed to occur before the other three steps according to NPT, did not reach its peak until toward the end of the period.

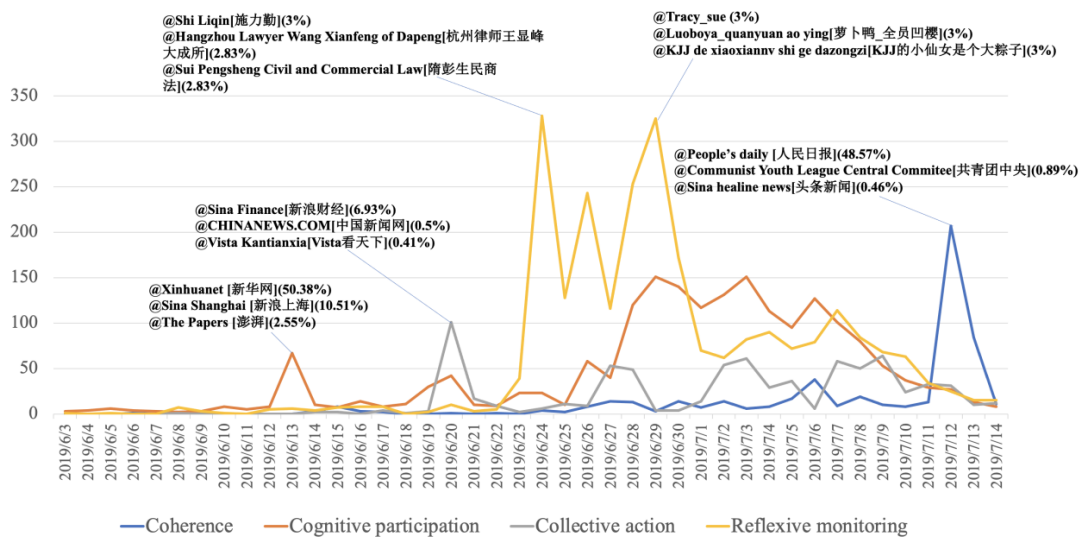


Figure 3. The participants at peaks in normalization process.

Combining the results of Figure 3 and Figure 4, we see that in the first peak on June 13, all of the top three participants were professional news media, including “Xinhua.net[新华网]”; “Sina Shanghai[新浪上海]”; and “The Paper[澎湃]” (account of a market-oriented news website and APP). They accounted for, respectively, 50.38%, 10.51%, and 2.55% of the total reposts of the day. In the widely reposted post, Xinhua.net refuted the false guidelines of waste classification disseminated online and clarified the actual standards. On a closer look at the content, we found that on this day, the source of all three media came from WeChat—another popular social media platform based on real-world social relations. In particular, all

three media picked up the clarification of standards from the Shanghai Municipal Waste Management Office's WeChat account, then transferred it to Weibo and gained reposts in large numbers.

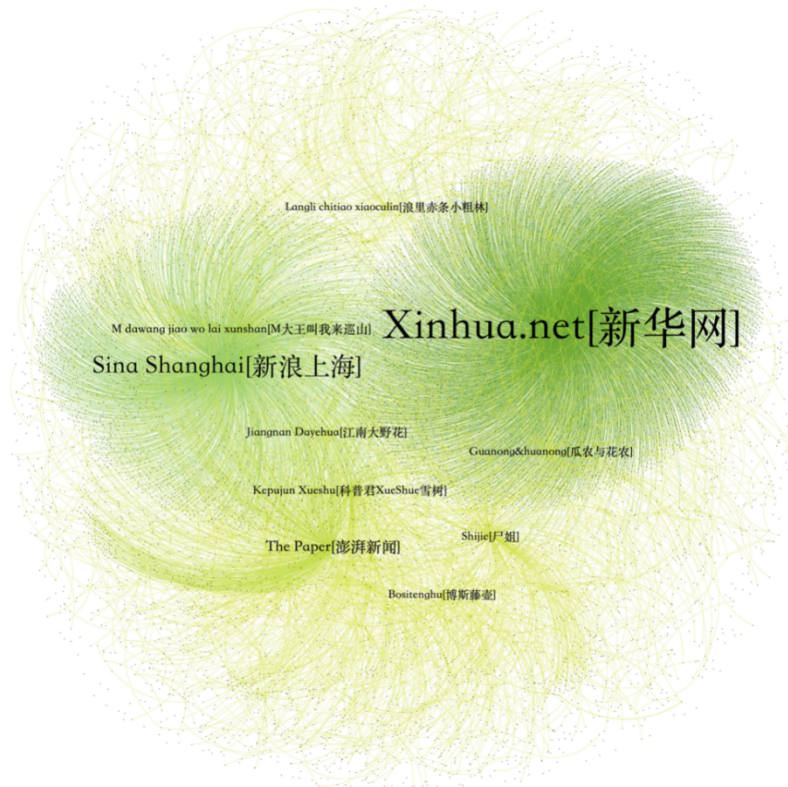


Figure 4. The social network on June 13.

The second peak on June 20 (Figure 5) was also dominated by professional news media, including "Sina finance[新浪财经]" (market-oriented media run by the Internet enterprises Sina), "CHINANEWS.COM[中新视频]" (account of China News Agency), and "Visat kantianxia[Vista看天下]" (account of a market-oriented news organization). They accounted for, respectively, 6.93%, 0.50%, and 0.41% of the total reposts of the day. Sina finance's [新浪财经] post that triggered a great volume of reposts was about the policy that spawned highly paid waste-classification job opportunities. Interestingly, however, this post was a repost of a post from "CHINANEWS.COM[中新视频]," a state-run media that received only a few reposts on its own. As a powerful hub of the network, therefore, "Sina finance[新浪财经]" orchestrated the state-run media in transferring policy engagement into collective action—waste classification work with or without hired labor.



Figure 5. The social network on June 20.

The media were no longer dominant on June 24, when three public-opinion leaders appeared as hubs in the network (Figure 6). “*Shi Liqin* [施力勤],” a well-known financial blogger, notified that in the back-end treatment, classified waste was still processed together, as shown by the video attached to his post showing sorted garbage in a community in Shanghai being dumped into the same garbage truck. He criticized that wherever there were “policies from the top,” there were “countermeasures at the bottom.”

Shi’s critical post was reposted by intellectuals such as “*Hangzhou Lawyer Wang Xianfeng of Dacheng* [杭州律师王显峰大成所],” and “*Sui Pengsheng Civil and Commercial Law* [隋彭生民商法]” (Professor of Contract Law Research Center, China University of Political Science and Law). Grassroots users also appeared, such as “*Zishu tuanzi* [紫薯团子]”; “*Tuimao beng er li* [腿毛崩二栗]”; and “*Yinhui shenfu Xuyimiao* [银辉神父徐逸邈].” Therefore, unlike the network of the previous days when professional news media took the central positions, the network appeared now to be decentralized.

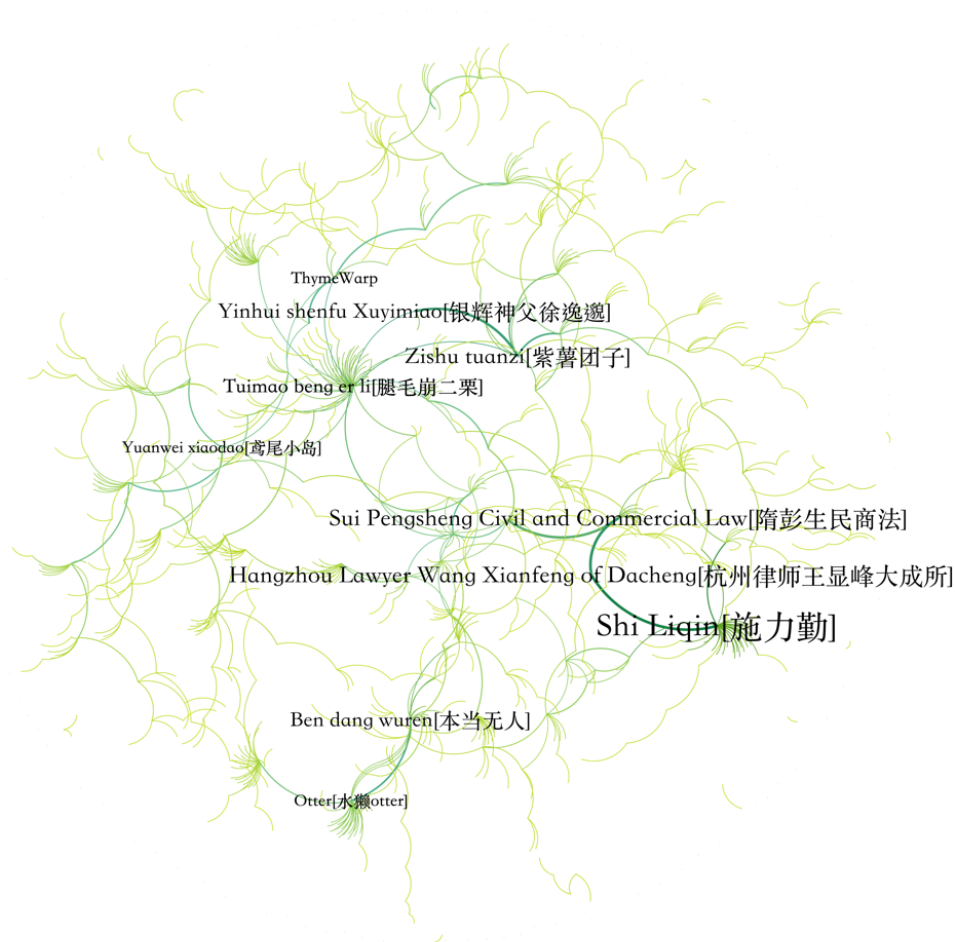


Figure 6. The social network on June 24.

Similarly, on June 29, the hubs continued to be grassroots participants, and the network remained decentralized (Figure 7). All of the top participants, including “tracy_sue”; “Luoboya_quanmin ao ying [萝卜_全民凹嘤]”; and “KJJ de xiaoxiannv shige dazongzi [KJJ的小仙女是个大粽子],” were not salient ones in the network before the day, yet each of them contributed 3% reposts of the network. The post that triggered a large scale of reposts was a response to formalism raised by the aforementioned Shi Liqin [施力勤]’s post, suspecting that the government shaped positive guidance to public opinion to dispel doubts.

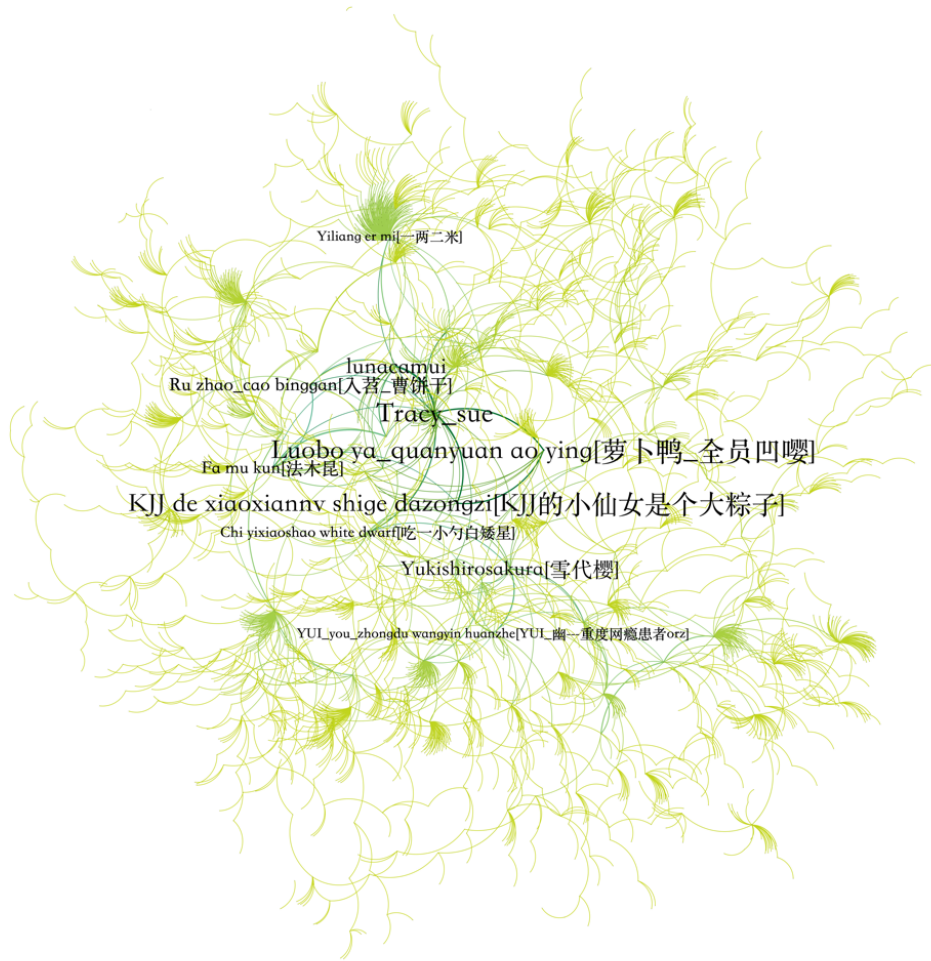


Figure 7. The social network on June 29.

State-run media regained the central position of the network on July 12, when “People’s Daily[人民日报]” explained why China should advance the new fashion of waste classification. This single post contributed 48.57% of reposts to the network (Figure 8). Reposts of this post by “the Communist Youth League Central Committee[共青团中央]” and “Sina Headlines[新浪头条]” obtained even more reposts on their own. In addition, “People’s Daily[人民日报]” reposted the same post later on the same day to emphasize the harm of unsorted garbage. Again, this repost received even more reposts by itself. Therefore, “People’s Daily[人民日报]” appeared twice in Figure 8.



Figure 8. The social network on July 12.

Together, these data illustrated that the dynamic process of mediatization—the communication among the mainstream, social media, public-opinion leaders, and average citizens, and the translation from questioning and mock understanding of the policy happened throughout the policy normalization process. As Figure 9 illustrates, in the early stages, the state-run media played a key role in bringing forth the policy issue and shaping public cognition. Later, the market-oriented media reposted posts from the state-run media and increased the salience of the policy. Subsequently, opinion leaders initiated reflexive monitoring of the policy when they questioned problems such as formalism and the control of public opinion, joined by grassroots participants afterward. Although previously, these grassroots participants had never taken a central position in the network, they maintained significant momentum in advancing deliberation on the policy, thus contributing to the building up of the whole network of issue debate. In the end, when the aforementioned joint efforts made by all participants eliminated the ambiguity of the policy, state-run media regained their dominance in the network, fulfilling policy coherence through the summary narrative.

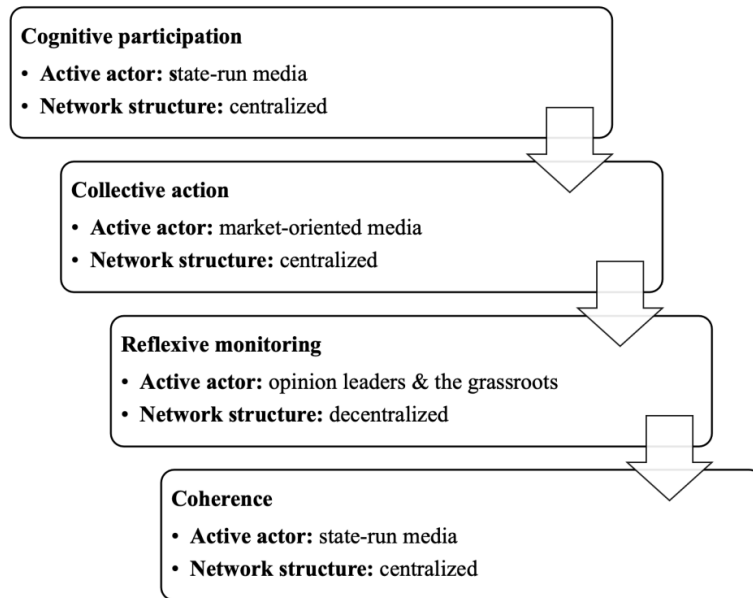


Figure 9. Mediatized participation and network structure in normalization process.

Favorable Agreement to the Policy

About RQ3 and the impacts of the normalization process, we used the number of “likes” to a post as a measurement of praise or agreement. As shown in Figure 10, the number of “likes” showed a linear upward trend over time, signifying an increasing acceptance of the policy.

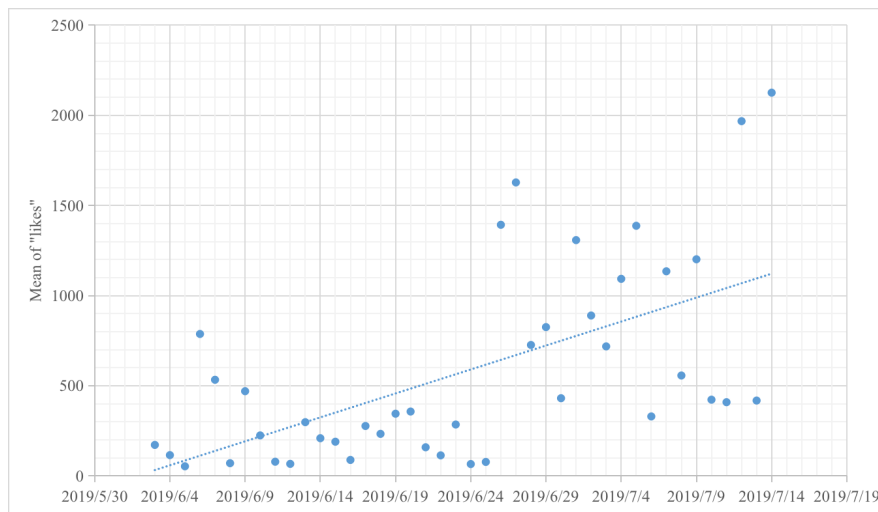


Figure 10. The chronological distribution of “likes.”

In the meantime, the results of the change ratio of participants showed a downward trend, indicating that participants habitually continued to stay in the issue network (Figure 11). Thanks to these stable and highly contributive participants, policy normalization was finally achieved.

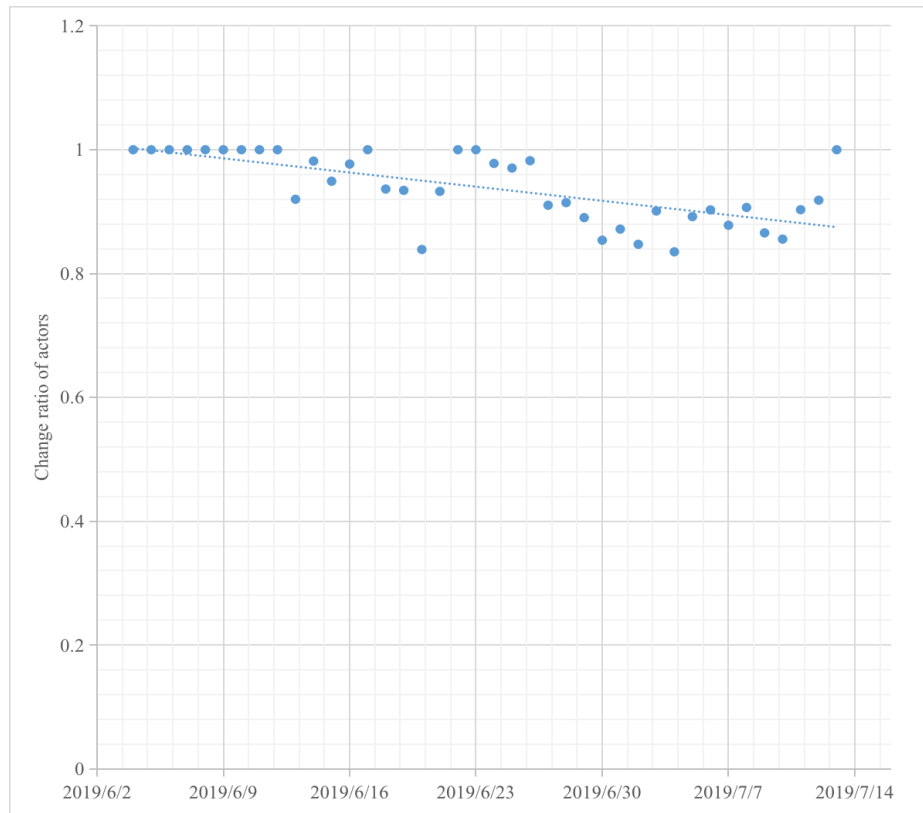


Figure 11. The chronological distribution of change ratio.

Conclusion and Discussion

Under the urgency of the Chinese garbage siege, a successful advocacy and implementation of the waste-classification policy is important. For a policy that may not only cause profound changes in people's daily lives but also demand nationwide compliance, the traditional state-driven and top-down advocacy would face challenges. To achieve effective orchestration and coordination in policy implementation, therefore, environmental governance that emphasizes negotiation, cooperation, and compromise becomes an inevitable choice.

The findings of this study reveal a new pattern of environmental governance in which mediatization plays a central role. First, the communication among the mainstream, social media, public-opinion leaders, and average citizens disrupted and reversed the assumed sequence of the normalization process of policy, therefore overcoming the rigidity of the command-and-control model of governance. Second, mediatization helped to

realize the translation from questioning, mocking to understanding of the policy, which smoothed the usually state-driven, hierarchical normalization process. Although the state-run media accounts initiated and shaped the cognition of policy, it was the market-oriented media, opinion leaders, and the grassroots that increased the salience of the issue, especially through the informal and playful reflexive monitoring of the policy.

The findings help enrich our understanding of the integration of governance logic and media logic. In a traditional view, the governance logic is top-down (Kaur & Sood, 2019), bureaucratic, and lacks flexibility because of institutional rigidity; on the contrary, the media logic is considered to possess characteristics of bottom-up (Bennett & Segerberg, 2012), decentralization, and spontaneity, which is often deemed as a threat to the government and a challenge to governance (Della Porta & Mattoni, 2014). Yet, the results of this study provided some empirical evidence that media technologies have reconstructed a new form of governance based on openness, collaboration, or intelligence in the digital space (Zhai, 2022). The embedding of media technologies has facilitated and shaped the operational logic of a bureaucratic government and strengthened the overall response to real problems (Tang, 2023).

The major theoretical contribution of this study, therefore, is its illustration of an emerging mode of governance based on integration of the governance logic and media logic—mediatized governance. We define mediatized governance as the joint governance by multiple actors through dynamic, mediatized negotiating networks for the common good as agreed on by the participants. First, the extension, substitution, amalgamation, and accommodation of media (Schulz, 2004) helps to achieve participatory governance of multiple subjects, including the state, market, and society. Contrary to the traditional government-led policy normalization process, participatory policy implementation between multiple subjects significantly improves the efficiency of policy normalization under the circumstances of asymmetric information. Second, mediatized governance emphasizes interest reconciliation rather than dominance. The dynamic, networked discussion of policy, as well as the public's scrutiny of the policy and feedback to legitimacy and efficiency of policy can lead to policy optimization.

In the era of rapid development of digital and media technology and its comprehensive penetration into society and culture, mediatization has become a meta process that shapes daily practice and social relationships (Livingstone & Lunt, 2014). Under the perspective of mediatization, media technology is no longer seen as a simple tool for government administration or social protest, nor is it simply embedded in the operation of bureaucratic government. Rather, mediatization can promote cooperation between administration and social mobilization and strike a balance between chaotic public participation and power concentration, and eventually enhance the effectiveness of governance (Kaur & Sood, 2019).

At the core of this new mode of mediatized environmental governance is the flexibility and unpredictability created by social media: Policy normalization would neither always follow a static and hierarchical model, nor always follow the intentions of policy makers. Rather, the eventual normalization and acceptance of policy depend on intensive discussion and rational deliberation among multiple stakeholders. For a state-initiated policy like waste classification, even though traditional media have played a rather active role in steering social media debates, eventually it is the orchestration among the multiple stakeholders that has advanced the implementation.

Thus, in the Chinese society where trust toward the local governments often remains relatively weak, mediatized governance demonstrates a potential to smooth policy implementation and dispel social disbelief. Tying this transition of governance pattern to the concept of "space of flows" (Castells, 1999), we see how social media magnified and accelerated the competition of the material organization of social practices that work through flows (e.g., standardization of waste classification, human resource mobilization, or infrastructure construction). And by doing so, it enhanced the opportunity of a more effective and versatile coordination among the state, market, and civil society.

Although the mediatized governance illustrated in this case was mainly carried out online by social media, its implications for offline environmental behaviors are also significant. First, because waste disposal is a fundamental practice rooted in daily life, the outcome of mediatized participation will ultimately be determined by and, in return, will also affect actual daily practice. Second, mediatization creates offline social surveillance and pressure during policy implementation when irregularities and misconducts exposed online trigger public condemnation and force relevant responsible parties to take environmentally friendly measures.

Finally, mediatized governance requires grassroots governments, especially community committees taking charge of waste disposal to coordinate conflicts of interest among multiple stakeholders (such as between property companies charging fees for waste disposal and residents unwilling to pay extra fees for waste-classification management). This local coordination will promote the standardization of policies.

Admittedly, the limitation of this study is that the findings revealed little information about the stakeholders of the private sector—business and industry. The reason was, probably, that private sectors tend to devote more to act in accordance with new policy than to engage in policy debate itself; thus, they bear much less presence in our social media data. This is the area that future studies could tackle, using either a longitudinal research design or a participant observation from business or industry to deepen our understanding of environmental governance in the complex of social transformation.

References

- Bennett, W. L., & Segerberg, A. (2012). The logic of connective action: Digital media and the personalization of contentious politics. *Information, Communication & Society, 15*(5), 739–768. doi:10.1080/1369118X.2012.670661
- Bennett, W. L., Segerberg, A., & Walker, S. (2014). Organization in the crowd: Peer production in large-scale networked protests. *Information, Communication & Society, 17*(2), 232–260. doi:10.1080/1369118X.2013.870379
- boyd, D., Golder, S., & Lotan, G. (2010). Tweet, tweet, retweet: Conversational aspects of retweeting on twitter, In *2010 43rd Hawaii International Conference on System Sciences*. Honolulu, HI: IEEE. doi:10.1109/HICSS.2010.412

- Carboni, J. L., Siddiki, S., Koski, C., & Sadiq, A.-A. (2017). Using network analysis to identify key actors in collaborative governance processes. *Nonprofit Policy Forum*, 8(2), 133–145. doi:10.1515/npf-2017-0012
- Castells, M. (1999). Grassrooting the space of flows. *Urban Geography*, 20(4), 294–302. doi:10.2747/0272-3638.20.4.294
- Cheng, N. Y. I., & So, W. M. W. (2015). Environmental governance in Hong Kong—Moving towards multi-level participation. *Journal of Asian Public Policy*, 8(3), 297–311. doi:10.1080/17516234.2015.1010471
- Choi, S., Yang, J. S. W., & Chen, W. (2018). Longitudinal change of an online political discussion forum: Antecedents of discussion network size and evolution. *Journal of Computer-Mediated Communication*, 23(5), 260–277. doi:10.1093/jcmc/zmy013
- Dai, J., & Zeng, F. (2022). *Environmental Risk Communication in China: Actors, Issues, and Governance*, Routledge, New York, NY.
- Dai, J., Zeng, F., & Wang, Y. (2014). The overlap of official and popular discourses: The party newspaper's multimedia convergence on the nuclear power issue. *Chinese Journal of Journalism & Communication*, 36(5), 104–119.
- Dai, J., Zeng, F., & Wang, Y. (2017). Publicity strategies and media logic: Communication campaigns of environmental NGOs in China. *Chinese Journal of Communication*, 10(1), 38–53. doi:10.1080/17544750.2016.1267024
- Della Porta, D., & Mattoni, A. (2014). Social networking sites in pro-democracy and anti-austerity protests: Some thoughts from a social movement perspective. In D. Trottier & C. Fuchs (Eds.), *Social media, politics and the state* (pp. 39–63). New York, USA: Routledge.
- Du, C., & Huang, C. (2019). From government-led to co-governance: Governance dilemma and innovation path of municipal solid waste classification. *Administrative Tribune*, 4, 116–121. doi of CNKI(China National Knowledge Infrastructure):10.16637/j.cnki.23-1360/d.2019.04.016
- Gan, C. (2017). Understanding WeChat users' liking behavior: An empirical study in China. *Computers in Human Behavior*, 68, 30–39. doi:10.1016/j.chb.2016.11.002
- Gask, L., Coupe, N., & Green, G. (2019). An evaluation of the implementation of cascade training for suicide prevention during the 'Choose Life' initiative in Scotland—Using normalization process theory. *BMC Health Services Research*, 19(1), 588. doi:10.1186/s12913-019-4398-1
- Gong, H. (2008). An analysis of the implementation structure of China's public policies. *Social Sciences in Yunnan* (1), 18–22.

- Grootendorst, M. (2020). MaartenGr/BERTopic: Fix embedding parameter (v0.4.2). Zenodo. doi:10.5281/zenodo.4430182
- Himmelboim, I., & Golan, G. J. (2019). A social networks approach to viral advertising: The role of primary, contextual, and low influencers. *Social Media + Society*, 5(3). doi:10.1177/2056305119847516
- Howlett, M. (2009). Government communication as a policy tool: A framework for analysis. *Canadian Political Science Review*, 3(2), 23–37. doi:10.24124/c677/2009134
- Huang, R., & Sun, X. (2014). Weibo network, information diffusion and implications for collective action in China. *Information Communication and Society*, 17(1), 86–104. doi:10.1080/1369118X.2013.853817
- Kaler, J., & Ruston, A. (2019). Technology adoption on farms: Using normalisation process theory to understand sheep farmers' attitudes and behaviours in relation to using precision technology in flock management. *Preventive Veterinary Medicine*, 170, 104715. doi:10.1016/j.prevetmed.2019.104715
- Kaur, A., & Sood, S. K. (2019). Analytical mapping of research on disaster management, types and role of ICT during 2011–2018. *Environmental Hazards*, 18(3), 266–285. doi:10.1080/17477891.2019.1567457
- Khan, S., Anjum, R., Raza, S. T., Bazai, N. A., & Ihtisham, M. (2022). Technologies for municipal solid waste management: Current status, challenges, and future perspectives. *Chemosphere*, 288(Pt. 1), 132403. doi:10.1016/j.chemosphere.2021.132403
- Li, W., & Weible, C. M. (2021). China's policy processes and the advocacy coalition framework. *Policy Studies Journal*, 49(3), 703–730. doi:10.1111/psj.12369
- Liu, J. (2016). Digital media, cycle of contention, and sustainability of environmental activism: The case of anti-PX protests in China. *Mass Communication and Society*, 19(5), 604–625. doi:10.1080/15205436.2016.1203954
- Livingstone, S., & Lunt, P. (2014). Mediatization: An emerging paradigm for media and communication studies. In Lundby, K. (Ed.) *Mediatization of communication (Vol. 21)* (pp. 703–724). Berlin, Germany: Walter de Gruyter.
- Lloyd, A., Joseph-Williams, N., Edwards, A., Rix, A., & Elwyn, G. (2013). Patchy 'coherence': Using normalization process theory to evaluate a multi-faceted shared decision making implementation program (MAGIC). *Implementation Science*, 8(1), 102. doi:10.1186/1748-5908-8-102
- Matland, R. E. (1995). Synthesizing the implementation literature: The ambiguity-conflict model of policy implementation. *Journal of public administration research and theory*, 5(2), 145–174.

- May, C. R., Albers, B., Bracher, M., Finch, T. L., Gilbert, A., Girling, M., . . . & Rapley, T. (2022). Translational framework for implementation evaluation and research: A normalisation process theory coding manual for qualitative research and instrument development. *Implementation Science, 17*(1), 19. doi:10.1186/s13012-022-01191-x
- May, C. R., & Finch, T. (2009). Implementing, embedding, and integrating practices: An outline of normalization process theory. *Sociology, 43*(3), 535–554. doi:10.1177/0038038509103208
- May, C. R., Mair, F., Finch, T., MacFarlane, A., Dowrick, C., Treweek, S., . . . & Montori, V. M. (2009). Development of a theory of implementation and integration: Normalization Process Theory. *Implementation Science, 4*(1), 29. doi:10.1186/1748-5908-4-29
- Meijer, A., & Thaens, M. (2010). Alignment 2.0: Strategic use of new internet technologies in government. *Government Information Quarterly, 27*(2), 113–121. doi:10.1016/j.giq.2009.12.001
- Mol, A. P. J. (2002). Political modernisation and environmental governance: Between delinking and linking. *Europaea Journal of the Europeanists, 8*, 169–186.
- Mol, A. P. J., & Carter, N. T. (2006). China's environmental governance in transition. *Environmental Politics, 15*(2), 149–170. doi:10.1080/09644010600562765
- Murthy, D., & Longwell, S. A. (2013). Twitter and disasters: The uses of Twitter during the 2010 Pakistan floods. *Information Communication and Society, 16*(6), 837–855. doi:10.1080/1369118X.2012.696123
- Nie, J., & Wang, B. (2012). Integration of multiple frameworks: The traditional media's reports of urban collective action. *Journalism Bimonthly (5)*, 58–64.
- Oliveira, G. H. M., & Welch, E. W. (2013). Social media use in local government: Linkage of technology, task, and organizational context. *Government Information Quarterly, 30*(4), 397–405. doi:10.1016/j.giq.2013.05.019
- Pang, N., & Law, P. W. (2017). Retweeting #WorldEnvironmentDay: A study of content features and visual rhetoric in an environmental movement. *Computers in Human Behavior, 69*, 54–61. doi:10.1016/j.chb.2016.12.003
- Ran, R. (2015). *China's local environmental politics : The distance between policy and implementation*. Beijing, China: Central Compilation & Translation Press.
- Schulz, W. (2004). Reconstructing mediatization as an analytical concept. *European Journal of Communication, 19*(1), 87–101. doi:10.1177/0267323104040696
- Shao, P., & Xie, Y. (2020). From solution to construction: A study of reporting on the practice of garbage classification from the perspective of constructive journalism. *Journalism Research, 170*(6), 23–35.

- Sun, W. (2002). Critical coverage as a technic of governance: Politics-society mechanism during the market transition in China. *Journalism & Communication Review (Collection)* (1), 123–138.
- Tang, J. (2023). The logic of digital technology driving the territorial operation of bureaucratic organizations: A case study of the “four platforms of grassroots governance” in Zhejiang Province. *Governance Studies*, 39(1), 40–52. doi of CNKI(China National Knowledge Infrastructure):10.15944/j.cnki.33-1010/d.2023.01.001
- Tong, T., & Sun, P.(2022). From national voluntary tree planting to carbon account: Platform of ant forest and reflection on youth discourse strategy. *China Youth Study* (11), 79–87. doi of CNKI(China National Knowledge Infrastructure):10.19633/j.cnki.11-2579/d.2022.0152
- Tufekci, Z., & Wilson, C. (2012). Social media and the decision to participate in political protest: Observations from Tahrir Square. *Journal of Communication*, 62(2), 363–379. doi:10.1111/j.1460-2466.2012.01629.x
- Vakeel, K. A., & Panigrahi, P. K. (2018). Social media usage in E-government: Mediating role of government participation. *Journal of Global Information Management*, 26(1), 1–19. doi:10.4018/JGIM.2018010101
- Wang, X., Zhao, W., & Yuan, T. (2017). Social media measurement: A review of media metrics. *Chinese Journal of Journalism & Communication*, 39(04), 6–24. doi of CNKI(China National Knowledge Infrastructure):10.13495/j.cnki.cjjc.2017.04.001
- Xu, J. H. (2014). Communicating the right to know: Social media in the do-it-yourself air quality testing campaign in Chinese cities. *International Journal of Communication*, 8, 1374–1393.
- Yan, W., Pan, Z., & Wu, H. (2020). Mediatized governance: A comparative case analysis of television wenzheng shows. *Journalism & Communication*, 27(11), 37–58.
- Zeng, F. (2015). Diffusion effects of Chinese environmental contentions : Cases of Not In My Back Yard conflicts. *Journal of Northwest Normal University (Social Sciences)*, 52(3), 110–115.
- Zeng, F., & Dai, J. (2015). *Risk communication in China: The road to social trust*. Beijing, China: Tsinghua University Press.
- Zeng, F., Dai, J., & Javed, J. (2019). Frame alignment and environmental advocacy: The influence of NGO strategies on policy outcomes in China. *Environmental Politics*, 28(4), 747–770. doi:10.1080/09644016.2018.1525805
- Zhai, Y. (2022). Has digital government replaced E-government? Based on the division of government informationization and governance modernization. *Chinese Public Administration* (2), 114–122. doi of CNKI(China National Knowledge Infrastructure):10.19735/j.issn.1006-0863.2022.02.14

Zhang, J., & Li, Y. (2011). 'Junk-besieged city' and the urban environmental protection in west china: A case study of kunming. *Journal of Yunnan University of Nationalities (Humanities and Social Science)*, 28(5), 118-126.

Zhou, X. (2014). China's national governance and its model: A holistic perspective. *Academic Monthly*, 46(10), 5-11.