



Coproducing Responses to COVID-19 with Community-Based Organizations: Lessons from Zhejiang Province, China

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Abstract:

Zhejiang Province achieved one of the best records in containing the COVID-19 pandemic in China, what lessons can the world learn from it? What roles do community-based organizations play in its success story? Based on more than 100 interviews during and after the outbreak in Zhejiang, this article provides a roadmap of how community-based organizations were involved in the three distinct stages of Zhejiang's responses to COVID-19. We recommend that public sector leaders strategically leverage the strengths of community-based organizations in multiple stages of COVID-19 responses; incentivize volunteers to participate in epidemic prevention and control; provide data infrastructure and digital tracking platforms; and build trust and long-term capacity of community-based organizations.

Evidence for Practice :

- Strategically engaging community-based organizations in coproducing responses to COVID-19 is crucial for emergency management and post-crisis recovery.
- Community-based organizations play differentiated yet critical roles in various stages of COVID-19 responses.
- Governments need to set up the data and institutional infrastructure to

facilitate the participation of their citizens and community-based organization in crisis management and response.

After the outbreak of the COVID-19 pandemic, no country can fight it alone, especially in such a globalized world. China is the first country to report COVID-19 and put in place strong wartime-like command and control mechanisms to control the virus. According to the latest information on the cumulative case totals across the most affected countries (see Figure 1), although China had the earliest reported outbreak in the world, the curve in China flattened in two months and has remained stable.

Insert Figure 1 About Here

Despite such a huge success in containing COVID-19, China is getting mixed feelings and comments from the rest of the world, especially developed countries in Europe and North America. On the one hand, the world is marveling at how China, with such a large and dense population, could successfully contain the virus within two to three months. On the other hand, because of their faith in individual liberty and the relatively limited power and capacity of their governments, other countries do not regard the experiences in China as valid examples from which they can learn. People often associate the success of China to the complete lockdown in Wuhan and the extreme power of the state machinery. There are also concerns about China's covering up of the actual statistics of the COVID-19 outbreak, especially during the early stages in Wuhan (Barnes 2020). These widely held beliefs and assumptions are in conflict with some of the core values held by advanced democratic countries. They

further prevent other countries from learning the more comprehensive picture of how COVID-19 was successfully contained in China through complex networks of community-based organizations working in collaboration with the state. For example, In response to the early criticism toward information disclosure and the resulting information credibility deficit, Li (2020) illustrated how the Chinese government was able to rely on experts and voluntary groups to increase information credibility and quickly restore public trust after the initial COVID-19 outbreak in Wuhan.

We argue that solely crediting the central government for the successful effort at containing COVID-19 in China is not only dangerous on ideological grounds but also misleading in terms of how the world can learn from these experiences in China. Despite the strong policy directives and commands from the central government, not every province in China faced the same level of pressure from COVID-19 because of their varying levels of economic development and different geographical locations. They also presented different patterns about how they contained and responded to COVID-19. These variations can hardly be attributed to central government actions. We argue how community-based organizations worked with their local governments to coproduce responses to COVID-19 was a key determinant of whether containment strategies were effective at the local level.

The importance of community-based organizations in shaping public service outcomes and strengthening disaster response is well articulated in the academic literature. McGuire and Schneck (2010) note the strategic collaboration between public, private, and nonprofit organizations is the first principle that the Department

of Homeland Security lists for emergency management. Elinor Ostrom and her colleagues at Indiana University develop the concept of coproduction to describe the nature of public services: “All public goods and services are potentially produced by the regular producer (government agencies) and by those who are frequently referred to as the client.... Coproduction implies that citizens can play an active role in producing public goods and services of consequence to them” (Ostrom, 1996, p. 1073). Community-based organizations play important mediating roles in helping citizens involved in public service provision and the work of local governments (Cheng 2019).

The response to COVID-19 is a perfect example of why coproduction and community-based solutions are important. For a locality to develop a successful strategy in coping with the virus, it requires both government intervention and voluntary cooperation from its citizens. From self-quarantine to practicing physical distancing, from wearing masks to using hand sanitizers, the government cannot control every action taken by its citizens. In fact, decentralizing containment strategies to neighborhoods and communities is regarded as one of the keys to China’s success story. According to the latest report on *China’s Fight Against COVID-19* (China Watch Institute 2020), universal participation with social cohesion is considered one of the four most important tools that China leveraged in the fight against COVID-19. This report synthesizes opinions and contributions from more than 70 experts within and beyond China. It highlights the importance of the active response of citizens to the government’s call for action, their self-discipline, and

community-based management. Due to its success, we chose Zhejiang Province in China to illustrate how community-based organizations were involved in different stages of the COVID-19 response. These practices provide lessons for other localities to adapt and adopt.

Background of Zhejiang and Its Success in Containing COVID-19

Zhejiang, located on the eastern coast of China, has 11 cities and 89 counties/districts¹ (see Figure 2). It is regarded as one of the most densely populated and developed regions in China. The population density of Zhejiang is around 540 people per square kilometer, two times and five times that of Britain and France, respectively. Because of the active development of private businesses in Zhejiang, it is also one of the major destinations for migrant workers. In 2018, the net population inflow into the province reached 800,000.

Insert Figure 2 About Here

Because of its level of economic development and high population density, Zhejiang was one of the most affected provinces in China outside of Hubei, where cases were first reported. Compared to the national average, Zhejiang experienced a larger COVID-19 outbreak during the initial stage. The curve quickly flattened in Zhejiang, however, while cases in other provinces still grew (see Figure 3). As the central government issued similar guidelines to provincial governments outside Hubei, why were the responses in Zhejiang so effective? What roles did community-based organizations play in these responses? What lessons can other cities, countries, and

regions learn from these experiences in Zhejiang?

Insert Figure 3 About Here

To shed light on these questions, the authors and colleagues at Zhejiang University conducted 147 semi-structured interviews with top government officials (12), agency directors (30), civil servants (70), and ordinary citizens (35) from February 18 to May 13, 2020. The interviews lasted from 30 to 60 minutes. To triangulate the responses from multiple parties, same set of questions were asked about the roles of community-based organizations in fighting against COVID-19². After the interviews were transcribed, the research team first synthesized the key roles played by community-based organizations as they emerged from the interviews and then mapped these roles to different stages of COVID-19 responses.

The long-established collaborative relationship between the university and local governments in Zhejiang helped the research team quickly gain trust and support from top government officials to facilitate the implementation of this research³. Five major cities and seven counties/districts within these cities⁴ were visited by the research team, with on average two days spent in each city⁵. The field interviews are still ongoing in cities and counties/districts in Zhejiang as the date this article is being written. These field interviews provide firsthand insights from government officials and communities who are at the forefront of this crisis, especially those cities and counties/districts with the highest risk of COVID-19 transmission in Zhejiang.

Our interview findings generate a strong convergence towards the recognition of the important role of community-based organizations in every stage of COVID-19 responses: comprehensive epidemic prevention and control, balancing epidemic control and social functions, and the normalization of epidemic prevention and control.

Table 1 presents the examples and the key roles community-based organizations played in each stage of Zhejiang's response to COVID-19.

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The Critical Roles Community-based organizations Played in Zhejiang's Responses to COVID-19

Because of its vibrant private economy, Zhejiang has the most active social sector in the country. These community-based organizations have been historically active in response to various natural disasters, especially typhoons. Although the outbreak of COVID-19 presented a unique set of challenges compared to a typical natural disaster, these community-based organizations were able to organize quickly and work with local governments to respond to the disease. Official statistics have revealed that 34,000 community-based organizations within Zhejiang responded to the COVID-19 crisis, and over 2.8 million volunteers were mobilized to join community service activities (Zhejiang Civil Affairs Bureau 2020). The major roles of community-based organizations during COVID-19 included mobilizing volunteers to trace the source and spread of COVID-19, collecting donations and supplies for epidemic control, providing necessary social and community services, offering welfare services, assisting enterprises with production resumption, exerting psychological counseling and social work, and building collaboration platforms to promote sustainable economic development.

Stage One: Comprehensive Epidemic Prevention and Control

The first stage of the COVID-response was featured by the rapid increase of infections and the comprehensive tracing and control of COVID-19 sources. During the stage of comprehensive epidemic prevention and control, community-based organizations played three major roles: mobilizing volunteers to trace COVID-19 patients and those residents who were in close contact with the patients, collecting donations and supplies related to epidemic prevention and control, and providing community services to help people who were staying at home receive basic life support.

Emergency community-based organizations assisted local governments in searching and testing for COVID-19 cases and setting up checkpoints at the entrances of the province and communities. Since Zhejiang suffers from typhoons and floods in summer and autumn almost every year, community-based organizations and local governments have accumulated rich experiences in working together. In this stage of responses to COVID-19, local governments mainly worked on pooling strengths and providing resources to the most affected areas. Emergency community-based organizations were responsible for rendering specific services to townships, towns, and villages. According to the Zhejiang Civil Affairs Bureau (2020), 70 emergency rescue teams, including the Dolphin Emergency Rescue Team of the Hangzhou Dishui Commonweal Service Center, the Yueqing Blue Sky Rescue Service Center, the Wenzhou Black Horse Rescue Service Center, and the Ouhai Sea Hawk Rescue Center, organized 12,800 volunteers to aid transportation and public security. They established temporary tents to screen people for COVID-19 through temperature

checks at expressway entrances, railway stations, road entrances to villages and supermarkets. These efforts effectively prevented the epidemic from spreading.

Community-based organizations created a cross-department collaboration network with local governments and private enterprises, building a quick response mechanism for material demands related to epidemic prevention and control. By February 12, 2020, organizations like the Zhejiang Provincial Charity Federation and the Red Cross Society of China Zhejiang Branch raised RMB 1.557 billion, 15,356,300 surgical masks, 704,000 protective suits (disposable surgical gowns), 139,700 pairs of protective goggles, 33,700 pairs of shoe covers and other materials worth RMB 239 million. Zhejiang Provincial Charity Federation launched an online fundraising campaign called “Work Together to Fight Against COVID-19,” which after being released on Tencent Foundation on January 25, collected RMB 10 million within 24 hours (Zhejiang Civil Affairs Bureau 2020).

Community-based organizations also cooperated with local government to carry out community investigations into COVID-19, and they provided personalized services. The head of Fuyang District said that the cooperation between community-based organizations and government played a significant role in tracing people who had been in close contact with patients⁶. According to the interview, community-based organizations of Fuyang visited 179 residential areas in 50 communities. They teamed up with over 1,400 officers of towns and nearly 1,600 officers of villages under the 24 townships of the district to search for possible close contacts with patients. After three rounds of thorough investigations and quick

isolation, Fuyang finally gained control over the risk of epidemic transmission and population mobility.

The head of Huangyan District regarded community-based organizations' daily services as a significant contribution enabling the public to willingly stay at home in quarantine. After Huangyan entered complete lockdown, community-based organizations delivered food to people living in Yuanqiao town, the hardest-hit area in Huangyan. Their deliveries included a total of 38,151.5 kilograms of pork, 76,850 kilograms of vegetables, 11,347.5 kilograms of eggs, 27,950 kilograms of rice, and 1,734 bottles of cooking oil, worth RMB 2,861,329⁷. Due to these efforts, residents had few complaints about the 18-day lockdown. Community-based organizations played key role in helping local residents get access to their life necessities and get through the quarantine periods. In our interviews, residents also shared their efforts in preparing free meals and deserts to serve local government officials and volunteers to show their appreciation⁸.

Community-based organizations also began involving volunteers in community services during epidemic prevention and control. They created a platform called the "Voluntary Bank" to record the place and time of voluntary services. Community-based organizations changed volunteers' time into benefits, loans, and financial services at local banks, which encouraged volunteers to contribute their time in fighting against COVID-19. This key role of mobilizing volunteers continued in the subsequent stages of COVID-19 responses.

Stage Two: Balancing Epidemic Control and Social Functioning

Starting from February 10, people began to resume work and production, marking that epidemic prevention and control in China entered a new stage. The Chinese Central Government asked local governments to restart economic and social development while ensuring epidemic prevention and control. During the stage of balancing epidemic control and social functioning, community-based organizations in Zhejiang adopted information technology and digital tools to closely monitor the status of COVID-19 patients or people in close contact with these patients, assist enterprises to gradually resume production.

The implementation of the Zhejiang health QR codes was a game-changer for how community-based organizations were involved during this stage of COVID-19 responses. The Zhejiang health QR codes was a digital innovation Zhejiang adopted to use three colors (green, yellow and red) to manage and monitor the health conditions of their residents and everyone who wants to enter communities in Zhejiang (see Figure 4). This information technology-based health surveillance system provides an efficient and flexible mechanism to generate individual-based solutions in the prevention and control of COVID-19 (Wu, Xu, and Wang 2020). While community-based organizations in Zhejiang kept maintaining checkpoints in residential areas during this stage, the implementation of the health QR codes greatly improved the efficiency and scale of their work. For example, more than 230 community-based organizations in Yinzhou district came to communities for 24-hour health codes checking and temperature measurement. The head of Yinzhou district treated this close partnership between community-based organizations and local

governments as the core force in fighting against COVID-19⁹.

Insert Figure 4 About Here

Economic organizations also teamed up with industrial and business associations to collect resources and provide services for responding to enterprise needs, so that small and micro enterprises could resume production in an orderly way. The great number of small and micro enterprises in diverse industries are the economic foundation of Zhejiang, accounting for 80% of the province's GDP. These small and micro enterprises are vulnerable, however, to market risks and had difficulties in quickly resuming production. Industrial and business associations played an instrumental role in organizing these enterprises to support each other during the economic downturn.

The head of Wenzhou city said that during epidemic prevention and control, industrial and business associations grouped member enterprises to alleviate their burdens¹⁰. For example, the Wenzhou Glass Industry Association and the Wenzhou Clothes Business Association inventoried enterprises' needs for temperature measurement equipment, masks, and other protective materials, after which they conducted collective procurement, which greatly reduced the cost. In addition, they updated information on production resumption to fix the raw material supply chain and product distribution chain. Industry associations established financial service platforms and channels for legal aid, benefiting member enterprises with high-quality and convenient counseling services. Business associations initiated fee reductions to lighten rent burdens on member enterprises. Collectively, the efforts of industrial and

business associations in Zhejiang accelerated the production resumption of small and micro-enterprises. On February 26, 2020, a total of 99.3% of the 777 small and micro business industrial parks reopened, and the production resumption rate of the businesses located in these parks reached 67.3% (Zhejiang Daily 2020).

Stage Three: The Normalization of Epidemic Prevention and Control

Starting from March 1, the economic and social life in China gradually returned to normal, as 28 provinces celebrated zero increases in confirmed COVID-19 cases. Zhejiang had not detected any new COVID-19 patients since February 21, while those discharged from hospitals accounted for 78.3% of the total confirmed cases by then. The response to COVID-19 thus entered a stage of epidemic prevention and control normalization.

In this ongoing stage of the COVID-19 response, community-based organizations in Zhejiang shift their focuses to psychological counseling, social work, and economic development. Mental health service providers actively provides psychological support to people affected by COVID-19 in a bid to prevent, mitigate, and control the social impact of the epidemic. The Zhejiang Association for Mental Health organizes psychological experts to join voluntary psychological counseling platforms, providing timely and professional psychological crisis intervention for COVID-2019 patients, their family members, and health workers. The Xiaoci Social Innovation and Development Center of Jiaxing cooperates with social work institutions to build a team composed of 21 certified psychological counselors and social workers for online services, including psychological counseling, as well as

support and crisis intervention for family members of patients and people living in quarantine areas. The Deqing Association for Mental Health, along with many other community-based organizations, sets up a volunteer team and the psychological crisis intervention hotline to provide psychological assistance for people under quarantine and for health workers at the front lines.

Community-based organizations in Zhejiang also participates in medical aid with care services. The Wenling Federation of Internet Practitioners, the Wenling Medical Association, and other organizations join hands to launch a mini program, “Voluntary Clinic,” which invites local experts to offer free public medical services. The Zhejiang Social Work Development Service Center collaborates with local hospitals to organize medical social workers to support patients, their family members, and health workers.

Community-based organizations like Yuhang Metal Products Industry Association and Wenzhou Shoe Leather Business Association actively promotes sustainable economic development through building collaboration platforms for work resumption, fueling the sharing of employees and materials. The head of Yuhang district commented that community-based organizations acquired human resources, established employee sharing platforms, and connected industries on the entire production chain during the normalization of epidemic prevention and control¹¹. Industrial and business associations provide enterprises with digital human resource services and releases nationwide employment maps and labor force distribution maps, facilitating enterprises in acquiring human resources via diverse channels and varied methods. Local industrial associations and leading enterprises utilizes their market

influence to jointly drive work resumption, innovate employment methods and work resumption models, and share employees and materials.

What Can Public Sector Leaders Do to Better Engage Community-based organizations in Their Responses to COVID-19?

In 2010, Rosemary O’Leary and David Van Slyke organized the special *Public Administration Review* issue on the future of public administration in 2020. In this special issue, McGuire and Schneck (2010) proposed the provocative question: what if Hurricane Katrina had hit in 2020? Coincidentally but unfortunately, in 2020, the world is facing a challenge that is on a much larger scale than Hurricane Katrina. Worldwide confirmed COVID-19 cases have reached 3.19 million as of April 29, 2020, and this number continues to rise. Making things worse, two superpowers in the world - China and the United States - are still playing the blame game on ideological grounds instead of cooperating to combat this global challenge together. Because of these political and ideological barriers, China’s success in fighting against COVID-19 is framed as a concentration of power in the central government and a deprivation of individual liberty. While the central government and its relationship with provincial and local governments in China differ from Western democratic nations, it is clear that the experiences in Zhejiang teach us the lesson that citizen coproduction and the involvement of community-based organizations have played crucial roles in every stage of COVID-19 responses.

How can public sector leaders in other localities and countries learn from

Zhejiang's experience? We propose the following recommendations for public sector leaders to better engage their citizens and community-based organizations in their responses to COVID-19.

Strategically Leveraging the Strengths of Community-based organizations in Multiple Stages of the COVID-19 Response

Community-based organizations played varied yet coordinated roles in Zhejiang's response to COVID-19. For example, emergency response organizations (e.g. Dolphin Emergency Rescue Team of the Hangzhou Dishui) played major roles in mobilizing resources and providing supplies, while industrial and business associations (e.g. the Wenzhou Glass Industrial Association) played important roles in economic recovery. It is crucial for public sector leaders to think strategically and to create space to leverage the strengths of community-based organizations in the different stages of the overall COVID-19 response. Local government leaders should design a public governance mechanism which is inclusive to organizations and stakeholders outside the bureaucratic system and provide rules to facilitate their coproduction of quality public services, in this case, the response to COVID-19 (Gao and Yu 2020).

Incentivizing Volunteers to Participate in the Prevention and Control of COVID-19

During the first stage of the COVID-19 response, there was considerable uncertainty about this new crisis. Therefore, citizens were not likely to serve as active volunteers. Innovative programs such as volunteer banks and those that had

government officials serve as volunteers incentivized local residents to participate in the prevention and control of COVID-19. These programs also built long-term volunteer pools for subsequent efforts by local governments and community-based organizations. Public sector leaders should design similar innovative programs to encourage and facilitate volunteering and citizen participation.

Providing Data Infrastructure and Digital Tracking Platforms

The implementation of the Zhejiang health QR code created the data infrastructure and digital tracking platform for community-based organizations to participate in the prevention and control of COVID-19. Individual citizens could also use their cell phones and the code to guide their own activities and behavior. This innovative use of big data and information technology connected the groundwork of community-based organizations to the macro-level management of local governments. The public sector should consider similar initiatives to provide necessary and direct information for citizens and community-based organizations to jointly participate in the prevention and control of COVID-19.

Building Trust and the Long-Term Capacity of Community-based organizations

Community-based organizations' quick and effective involvement in Zhejiang's responses to COVID-19 were largely built on their previous experiences in working with local governments in response to natural disasters. Therefore, the public sector should build trust with community-based organizations and invest in their long-term organizational capacity. This is crucial for effective community responses to future disasters and emergencies. The research process of this study is also an example of

how well-established university-government partnerships could help researchers and public managers build trust and jointly carry out important applied research project to facilitate policy innovation and diffusion.

Conclusion

The COVID-19 crisis presents paramount challenge to our society and exposes many problems of our administrative system. Solving these problems require scholars and practitioners to revisit the key assumptions and issues in public administration. More than ever before, COVID-19 teaches us the lesson that successful societal responses to the crisis require both effective governmental actions and citizens' voluntary cooperation (Moon 2020). The evidence and experiences in Zhejiang highlight the importance of community-based organizations in facilitating the coproduction of COVID-19 responses between the government and its citizens.

For scholars who study coproduction and government-nonprofit relations, the experiences in Zhejiang offer invaluable opportunities to advance our general understanding of coproduction and the role community-based organizations in disaster response. Cheng (2020, p.4) proposed one of the key questions for studying coproduction from a comparative perspective is "how should we envision coproduction when the scale of population moves to another order of magnitude in Asian and African countries?" In Zhejiang, digital governance and the implementation of Zhejiang health code provides the information platform to help address the scale problem for coproduction. However, will the digital divide and privacy concerns

further complicate the social equity implications of coproduction, especially in localities where citizens are less equipped with digital devices and capacities (Clark, Brudney, and Jang 2013; Gazley, Lafontant, and Cheng 2020)? More studies are needed in this intersection between administrative reforms and coproduction.

Second, the experiences in Zhejiang point to the importance of conceptualizing coproduction as a dynamic and multi-stage concept. Community-based organizations are likely to play different roles in various stages of public service provision (Cheng 2019). Finally, as the responses to COVID-19 are shaped by their historical and institutional contexts (Moloney and Moloney 2020), future research should examine how mandated versus voluntary coproduction and state-lead versus community-led coproduction work in different countries and cultural contexts (Souza and Neto 2018). Local experimentations stimulated by the COVID-19 crisis provide an ideal context to study these complex interactions for coproduction research.

Facing such a large-scale natural disaster like COVID-19, no sector or country can respond to it on its own. The evidence and experiences in Zhejiang suggest that there are solid steps public managers can take to better integrate citizens and community organizations in their responses to COVID-19. These lessons are not only important for provinces and localities in China, but also other countries and regions around the world as our fight against COVID-19 continues.

Notes

¹ In China, county or district is the lower administrative division of city.

² Key interview questions about the role of community-based organizations in COVID-19 responses include: how do you evaluate the responses to COVID-19 in your community? What were the key factors in shaping the responses to COVID-19 in your community? How unique are these factors and to what extent can experiences in your community be copied and implemented in other communities? What role did community-based organizations play in your community's responses to COVID-19 (probing questions asked for different stages of the responses)? How did you collaborate with community-based organizations in these responses and what were the main challenges/outcomes of such partnerships?

³ Zhejiang University helped facilitate some of the major administrative reforms in Zhejiang, including the recently famous "Run at Most Once" reform (Yu 2019).

⁴ We visited the following cities and counties/districts in our field research: Hangzhou City, Jiaxing City, Wenzhou City, Taizhou City, Ningbo City, Fuyang District and Yuhang District in Hangzhou, Nahu District and Tongxiang County in Jiaxing, Yongjia County in Wenzhou, Huangyan District in Taizhou, and Yinzhou District in Ningbo.

⁵ In a typical two-day visit in a city, we spent the first hour meeting the head of the city, then having a roundtable interview and discussion with the directors of key agencies in COVID-19 response. After the interview with the city government, we went to the counties to meet civil servants and community residents to understand how COVID-19 responses were implemented on the ground. All of the interviews were transcribed after getting permissions from the interviewees.

⁶ Interview conducted on 18 February 2020.

⁷ Interview conducted on 20 March 2020.

⁸ Interviews conducted on 21 March 2020.

⁹ Interviews conducted on 21 February 2020.

¹⁰ Interview conducted on 17 April 2020.

¹¹ Interview conducted on 25 February 2020.

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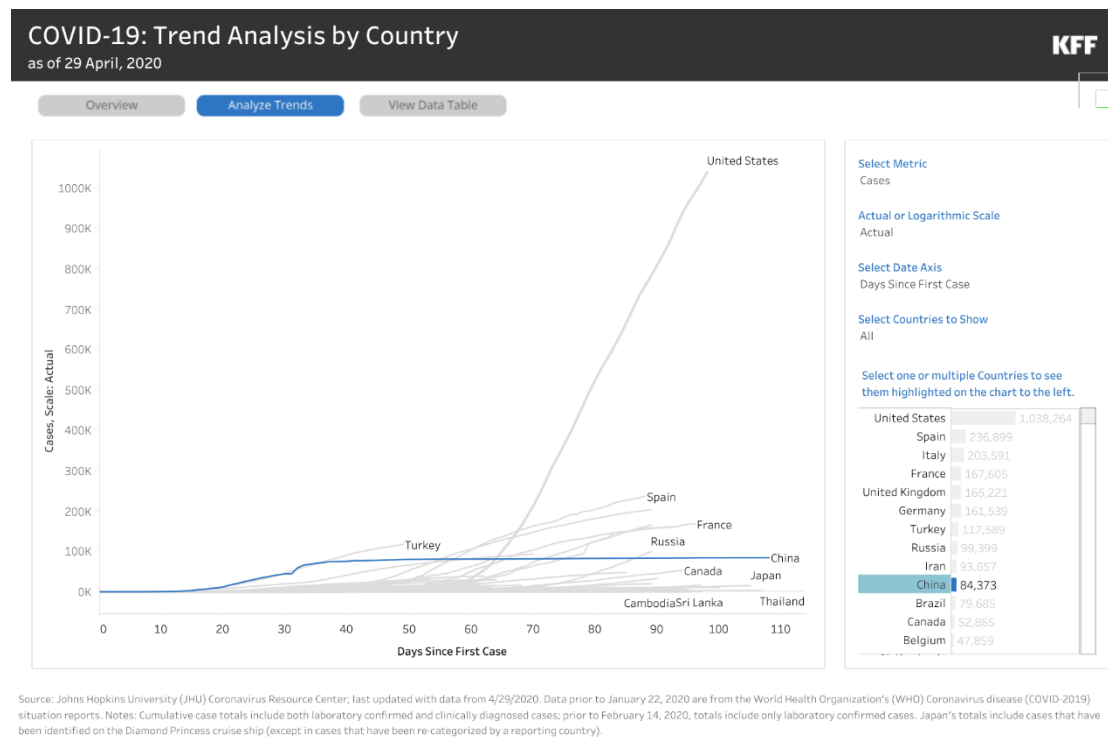
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Accepted Article

Figure 1. Trend of the Accumulation of Confirmed COVID-19 Cases Among the Most Affected Countries



Source: Kaiser Family Foundation COVID-19 Coronavirus Tracker as of April 29, 2020. <https://www.kff.org/coronavirus-covid-19/fact-sheet/coronavirus-tracker> (accessed on April 30, 2020)

Figure 2. Map of Zhejiang Province, China

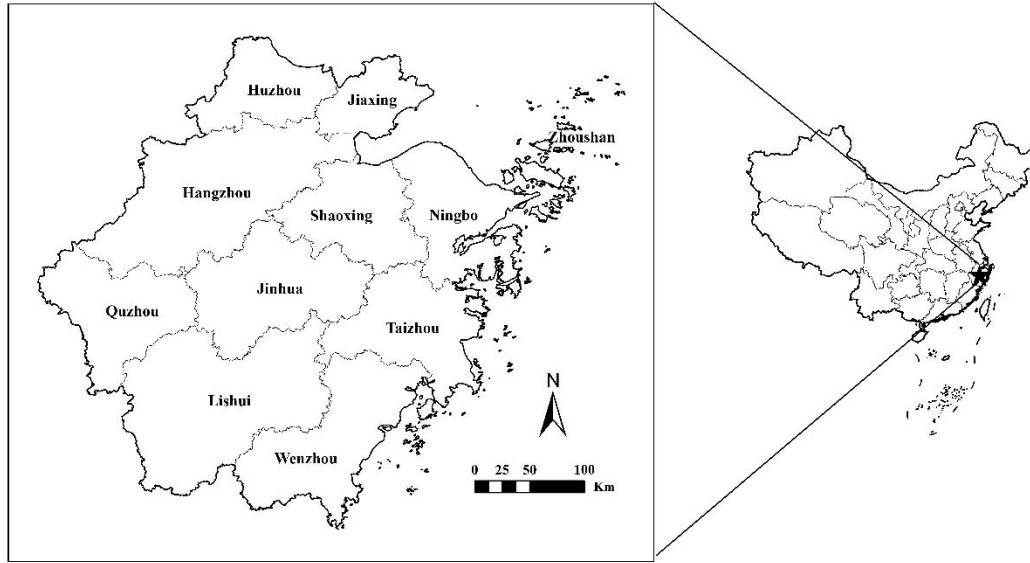
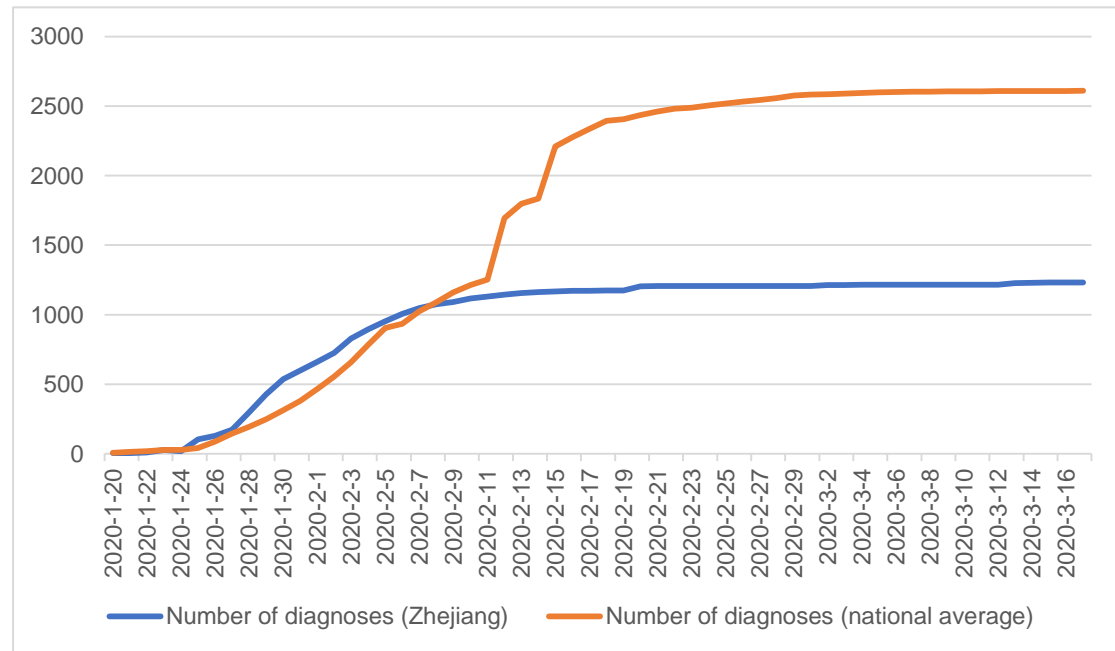


Figure 3. Net Confirmed Cases: Zhejiang vs. National Average



Note: Hubei is excluded from the national average because of the complete lockdown of major cities in that province.

Data source: Chinese Center for Disease Control and Prevention, <http://www.chinacdc.cn> (accessed on April 20, 2020)

Figure 4. Zhejiang's health QR Codes for tracking COVID-19



Note: Zhejiang implemented a color-based health code system through cellphone app. People with a green code could travel within Zhejiang and visit or leave Zhejiang by showing their codes. Red and yellow code holders had to go into government quarantine or self-quarantine for 14 or seven days, respectively, and their codes would switch green after consecutive health reports within this period.

Table 1. The Critical Roles of Community-based organizations in Zhejiang's Responses to COVID-19

Stage of COVID-19 Response	Key Roles of Community-based organizations	Examples of Community-based organizations
Stage One: Comprehensive Epidemic Prevention and Control	<ul style="list-style-type: none"> • Mobilizing volunteers to trace the source and spread of COVID-19 • Collecting donations and supplies for epidemic control • Providing community services to help people staying at home receive basic life support. 	<ul style="list-style-type: none"> • Emergency response organizations: Dolphin Emergency Rescue Team of the Hangzhou Dishui Commonweal Service Center; Yueqing Blue Sky Rescue Service Center. • Charitable organizations: Zhejiang Provincial Charity Federation; Red Cross Society of China Zhejiang Branch. • Community service organizations: Yuanqiao Township Community Service Center in Huangyan District.
Stage Two: Balancing Epidemic Prevention and Social Functioning	<ul style="list-style-type: none"> • Mobilizing volunteers to trace the source and spread of COVID-19 • Providing welfare services • Assisting enterprises with production resumption 	<ul style="list-style-type: none"> • Community service organizations: Haichuang Community Service Center in Yinzhou District. • Industrial associations: Wenzhou Glass Industrial Association. • Business associations: Wenzhou Clothes Business Association.
Stage Three: Normalization of Epidemic Prevention and Control	<ul style="list-style-type: none"> • Mobilizing volunteers to trace the source and spread of COVID-19 • Psychological counseling and social work • Building collaboration platforms to promote sustainable economic development 	<ul style="list-style-type: none"> • Community service organizations: Deqing Association for Mental Health; Wenling Medical Association. • Industrial associations: Yuhang Metal Products Industry Association. • Business associations: Wenzhou Shoe Leather Business Association.