

**From recovery resilience to transformative resilience:
How digital platforms reshape public service provision during and
post COVID-19**

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Resilience post COVID19

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Abstract

This paper investigates how government-sponsored digital platforms facilitated the transition from recovery resilience during COVID-19 to transformative resilience of city-level service provision post COVID-19. Using an in-depth case study of the Weijiayuan platform implemented in the Jiaxing City of China, we found that digital platforms played critical roles in both stages of COVID-19 and helped facilitate the transition from recovery resilience to transformative resilience. This transition was made possible by four conditions: adopting and experimenting digital platforms with public entrepreneurship, achieving a critical mass of usership, incentivizing the coproduction of public services, and generating accountability mechanisms for government responsiveness.

Keywords: Recovery Resilience; Transformative Resilience; Digital Government; Platforms; Citizen Participation; Resilient Public Service Provision; COVID-19

Introduction

The COVID-19 pandemic has posed significant challenges to communities and countries around the world. Although the development of COVID-19 vaccines provides a glimpse of the shoreline, many parts of the world are still trapped in the waves of the pandemic. The variants of the virus add another layer of uncertainty. Our society must adjust our governance strategies to cope with the existence of this virus rather than search for a way back to the old “normal.” Therefore, it is critical to build a more resilient public service provision system for the post COVID-19 society which is our new reality. But how? Despite the symposiums held and the special issues published by some of the best public management journals over the last year, this important question remains unanswered. Some scholars have recognized the importance of this inquiry (e.g., Ansell, Sørensen & Torfing, 2020). However, the lack of data across different stages of the pandemic makes empirical assessments challenging.

We aim to fill this gap in the literature by examining a particular type of innovation—government-sponsored digital platforms—and exploring the mechanisms through which they transformed the existing public service provision system. By a public service provision system, we mean the full public service provision cycle that includes the planning, design, delivery and assessment of public services (Bovaird 2007; Cheng 2019). We are particularly interested in the case of China for several reasons. First, its highly dense population centers were the first hit by COVID-19. However, its actions have put it on the high-performing end of the spectrum of pandemic responses. Life has largely returned to normal. Second, multiple studies regarded that the adoption of

digital platforms as one of the major innovations China has adopted to effectively control and contain the virus on an ongoing basis (Cheng et al. 2020; Gao and Yu 2020; Mei 2020; Wang and Cheng 2021).

China has now entered a new stage of its COVID-19 response—normalization of epidemic prevention and control. These digital governance platforms are likely to play different roles in public service provision. Our central research question is: how did digital platforms facilitate the transition from recovery resilience to transformative resilience of the existing public service provision system? We hope to contribute to public management practices and scholarship by using an in-depth case study of the city of Jiaxing in China’s Zhejiang province, where innovative digital governance platforms were first introduced to respond to the COVID-19 crisis and proved to be effective (Cheng et al. 2020). This success was possible because of four key conditions: public entrepreneurship, a critical mass of usership, incentivizing coproduction of public services, and accountability for government responsiveness. The digital platforms were able to facilitate the transition of the existing public service provision from recovery resilience to transformative resilience.

Drawing upon the literature on urban resilience, emergency management, and digital government, this paper makes three important contributions to the public management literature. First, by distinguishing two forms of resilience—recovery resilience and transformative resilience—we offer a more nuanced understanding of how public management innovations may influence both the bounce back and the bounce forward of public service provision systems (Chelleri and Baravikova 2021).

By linking government-sponsored digital platforms to different forms of resilience, our study also enriches our understanding of resilience beyond crisis and disaster management (Boin and Eeten 2013; Boin and Lodge 2016; Duit 2016).

Second, while scholars have recognized the platform revolution as a form of disruptive innovation that has transformed our economy and society (Dijk et. al. 2018), most studies focus on the platforms set up by large IT companies such as Google and Facebook. By examining the implementation and evolution of a government-sponsored digital platform, our work contributes to a better understanding of the role of government in a platform society and the coproduction of digital public services (Cheng 2020; Edelman and Mergel 2021).

Finally, there has been a heavy focus on the Chinese government's control and campaign-style responses to the COVID-19 crisis (Cai, Jiang, and Tang 2021). This raises the important yet puzzling question. Will those successful responses make local governments in China move backward to a command-and-control style of public management and public service provision system or move forward to a citizen-oriented and decentralized public service provision system (Osborne et al. 2016; Cheng et al. 2020)? Using the experience of a Chinese city that pioneered the use of digital platforms for COVID-19 response and recovery, our study sheds light on this important question and provides a roadmap for how digital platforms can be a key window of opportunity to transform local governance and public service provision (Steen and Brandsen 2020).

Literature review

Recovery resilience vs. transformative resilience

Resilience, an ecological concept, describes the ability of a natural system to continue functioning when facing a shock (Holling 1973). It has been increasingly used as a core governing principle to explain complex systems across different academic disciplines, such as geography, urban planning, and environmental studies (Chelleri and Baravikova 2021; MacKinnon and Derickson 2012; Meerow et al. 2016). Because mega-disasters may become the new normal, and we are gradually becoming a risk society (Beck 1992; Tierney 2014), resilience is likely to become a central concept in understanding complex and interconnected systems.

In the public management and administration scholarship, the first use of the concept of resilience dates back to the 1980s. Wildavsky (1988) used resilience as the main strategy to deal with risk and uncertainty in modern society. With the emergence and development of disaster and crisis management within public administration scholarship, resilience has gradually become a central concept when analyzing complex public governance systems (Boin et al., 2010; Boin and Lodge 2016). From the conceptual development of polycentricity and socio-ecological systems (SES), the Ostroms further made resilience a focal point in studies of multilevel governance systems (Ostrom and Janssen 2004; Toonen 2020). Although compared to other governance principles like efficiency, effectiveness, or equity, resilience is still a relatively new concept for public management scholars. The increasing interest in applying resilience thinking to analyzing public management problems is undeniable

(Duit 2016; Toonen 2010). Following Duit (2016, p.364), we define resilient public administration as a public governance system that “consists of multiple organizational units in non-hierarchical networks with overlapping jurisdictions and cross-scale linkages; it has spare capacity to use in times of crisis; it relies on multiple types of knowledge (e.g. scientific and experience-based) and sources of information; it encourages stakeholder participation; and, it uses trial-and-error policy experiments and social learning to keep the policy system within a desirable stability domain.”

As the study of resilience continues to evolve and flourish, scholars have also begun to reflect on the analytical rigor of the concept. After a systematic review of the scholarly literature on urban resilience, Meerow et al. (2016) concluded the term resilience is not well defined in the existing literature. They found 25 definitions for the concept of urban resilience alone. And those definitions were highly contested. Duit (2016, p.366) also concluded that one of the major reasons for the popularity of resilience is the “nebulous meaning of the concept.” While the ambiguity and inclusiveness of the concept invite more disciplines to join the discussion, they also create barriers for empirical studies as scholars cannot agree on what resilience means. In this article, we will avoid these complicated wranglings over definitions. Instead, our discussion is based on the current consensus about different dimensions of the resilience concept and how our study may bridge the gap.

In the larger discussion of resilience, two forms are generally conceptualized by the existing literature. The first is engineering resilience which refers to the ability of a system to resist change or quickly return to the pre-existing equilibrium after the change.

The second is ecological resilience which refers to the ability of a system, after a shock, to transform itself and reach a new equilibrium (Mackinnon and Derickson 2012; Meerow et al. 2016). The core conceptual distinctions between these two dimensions of resilience center on whether the new equilibrium is the same as compared with the status quo or whether new structures emerged during the crisis response. Some scholars call this distinction the ability of a system to bounce back or bounce forward (Manyena et al. 2011). The transformational properties entailed in the bounce forward conceptualization are being incorporated into frameworks of resilience (Folke et al. 2010). In a recent survey of scholars and practitioners' perspectives on urban resilience across Europe, Cheller and Baravikova (2021) found most respondents endorsed transformative or bouncing forward resilience approaches. In practice, however, public policy and management operations still mostly feature the recovery or bounce back approaches. There is a big gap in the literature about the pathways from bouncing back resilience to bouncing forward resilience (Meerow et al. 2016). Public management scholars have pushed for further research on resilience that moves beyond the period of crisis and disaster management and have suggested a greater emphasis on the long-term implications for system transformation (Duit 2016). To ensure the consistency of the concepts we use in this article, we use recovery resilience (bounce back) and transformative resilience (bounce forward) to describe these two distinct forms of resilience.

Conditions that facilitate the achievement of transformative resilience

Resilience is a buzzword across many different disciplines. But, relatively little research has been conducted to understand how societies or organizations can move from recovery resilience to transformative resilience. In a recent special issue organized by *Public Administration* on designing resilient institutions, Boin and Lodge (2016, p.294) state “the literature offers little if any feasible guidance when it comes to strategies or capacities that could make societies (or organizations) more resilient. There clearly is a real research opportunity.” As transformational resilience focuses on the shift of equilibrium and the emergence of new structures and behaviors after the external shock (Duit 2016; MacKinnon and Derickson 2012), we propose that three conditions are critical to the achievement of transformative resilience: public entrepreneurship, interorganizational coordination, and citizen coproduction of public services.

First, public entrepreneurship is conceived as innovation, creativity, and the establishment of new organizations or activities in the public sector (Klein 2008). A public entrepreneur can balance a new service delivery system by setting the rules of the game to identify public goals, creating new public organizations, managing public resources, and clarifying public interests (Klein et.al. 2009). Policy experiments and social learning are what public entrepreneurs usually adopt to keep a public service delivery system resilient (Duit 2016). When an entrepreneurial opportunity arises through a significant change in the environment or the opening of a policy window, public entrepreneurs establish new organizations or forms to experiment, to learn from

failure, and thereby achieve transformative resilience.

Second, interorganizational coordination produces the new structure of a service delivery system. A network of interorganizational collaboration, whether within the public sector or across sectors, improves the managerial effectiveness of public service delivery (Osborn et.al. 2016; Poocharoen and Ting 2015). By bridging organizations, there is an increase in the available stock of routines, information, knowledge, and regulations within non-hierarchical networks, allowing the public service delivery system to deal with sudden shocks and to transform into a resilient system (Berkes and Ross 2012).

Third, citizen coproduction of public services is often regarded as a key ingredient of resilient public administration systems (Bovaird 2007; Toonen 2010). Coproduction and the involvement of citizens in public service provision may make public service delivery systems more complex, but it makes the system more resilient. It integrates different types of knowledge (citizen experiences and professional knowledge) into the decision-making processes. One particular challenge about coproduction is how to incentivize citizens from diverse socioeconomic and demographic backgrounds to participate in public service provision and engage in public affairs (Gazley et al. 2020). Digitized information and nudging strategies have been demonstrated as effective interventions local governments could use to incentivize citizen engagement in coproduction (Li 2020; Linders 2012). However, financial rewards seem not be a consequential factor in increasing citizens' willingness to coproduce (Voorberg et al. 2018).

Digital platforms as a key element in building resilient public administration during and post COVID-19

In the public management literature, collaborative governance platforms are seen as critical mechanisms for co-creation and collaborative governance (Ansell and Gash 2018). Enabled by digital technology, some recent developments in platforms are expected to fundamentally change how society is governed and public services are provided (Ansell and Miura 2020; Dijck et.al. 2018). These platforms are closely related to the ideal type of resilient public administration, as Duit (2016) defines it. As the orchestrators of networks, they are likely to interact, and link up, with multiple organizational units (Shaw et al. 2019). They also promote citizen participation, stakeholder engagement, and social learning via a relatively low-cost trial-and-error policy experiment (Ansell and Miura 2020; Asgarkhani 2005). Information and communication technology (ICT) has enabled governments to invite stakeholders to participate in public affairs, essentially transforming themselves into government as a platform (Baba 2017). These features treat “boundaries as points of connection” and support “resilience by making it easier to reassemble resources and activities following a disruption” (Quick and Feldman 2014, p.674). They also facilitate citizen coproduction of public services at a significantly larger scale and scope (Edelmann and Mergel 2021).

Because of the critical roles in building resilient public administration they play, digital governance platforms are often associated with successful responses to COVID-

19. Cheng et al. (2020) identify Zhejiang province's data infrastructure and digital tracking platforms as the key reasons for its successful response to the crises in China. In addition to coordinating governmental actions, these digital platforms facilitated the responses of the business and nonprofit sectors (Wang and Cheng 2021; Zhang et al. 2020). Whether those platforms are temporary or permanent remains to be seen (Ansell et al. 2020). In other words, will digital platforms merely contribute to recovery resilience, or are they capable of building transformative resilience for local communities? By sharply reducing the cost of citizen participation on these digital platforms, will this innovation solve the ultimate question of scale for coproduction and collaborative governance (Ansell and Torfing 2015; Cheng 2020)? This is a unique opportunity to answer these questions as the COVID-19 crisis is likely to be a game changer for public management (Ansell et al. 2020). This study helps fill this knowledge gap and investigates how the responses to COVID-19 via digital governance platforms lead to the transformation of governance for public service provision after the emergency passed.

While digital platforms have some unique advantages in transforming the existing public administration systems, their side effects cannot be overlooked. First, digital platforms may be monopolized by a single company or government while facilitating the production of concrete outputs and outcomes. Balancing the rules to facilitate collaboration and citizen needs will be difficult (Ansell and Gash 2018). Second, the lack of protection of data privacy on digital platforms might lead to pervasive, harmful, and commercial data use and manipulation (Dijck et al. 2018;

Mansell 2017). Finally, digital platforms may systematically benefit some subgroups who have access to and knowledge about using those platforms. The great digital divide still presents equity challenges for the distribution of public services (Clark, Brudney, and Jang 2013).

Context and background

Our case site, Jiaying, is a city located in the northern part of Zhejiang province, China. 50 miles from Shanghai, it has a population of around 5 million making it larger than Berlin and Los Angeles. Because of its dense population and proximity to Shanghai, Jiaying was at significant risk of being hit hard by COVID-19. However, because of its effective and pioneering use of a digital platform of Weijiayuan¹, Jiaying was one of the least affected cities in Zhejiang. By 26 February 2021, the total number of cumulative infections was 45 in Jiaying, 1,321 in Zhejiang, and 89,887 in China². After the Zhejiang provincial government downgraded its first-level public health emergency response to the second-level³, Jiaying used its digital platforms to facilitate economic recovery and societal normalization. As life in Jiaying has returned to normal for many months, this provides us a unique and ideal opportunity to observe and track whether this digital governance platform is still in use and how it transformed the governance

¹ As the Jiaying government officially defines, Weijiayuan means micro Jiaying community.

² Data from National Health Commission of People's Republic of China (<http://www.nhc.gov.cn/>) and The People's Government of Zhejiang Province (<http://www.zj.gov.cn/col/col1228996608/index.html>).

³ The Zhejiang provincial government executive ordered the first-level public health emergency response from 23 January 2020 to 2 March 2020. The entire province locked down, and mobility restrictions were imposed on Zhejiang's cities. This included setting up building entrance checkpoints, establishing quarantine zones, public transit shutdowns, and limiting population inflows and outflows from the city and within-city mobility.

of public services after the COVID-19 crisis.

In response to the outbreak of COVID-19 in China, strict measures were taken to stop its spread. Economic activities stagnated during the 40-day lock-down in Jiaying. This included the closure of all non-essential businesses, cancellation of all public gatherings, and reporting any symptoms and the exposure histories of any people entering hotels, transport stations, airports, and the entrances and exits of main roads in the communities. However, economic and societal activities resumed and made steady progress month by month as life went back to normal. The value-added of industrial enterprises above the designated size increased sharply from March to June 2020 and grew steadily from July to December 2020 in Jiaying.

By the end of December 2020, the year-on-year growth rate of industrial added value above the designated size was 4.9%. This was above the national average level and in the top five in Zhejiang province. Similarly, electricity consumption often reveals the openness of transportation, warehousing, and postal services, as well as the wholesale and retail sectors. It understandably decreased in Jiaying during March and April of 2020. But, it grew sharply starting from May 2020. For the hospitality and catering services, the electricity data in Jiaying shows that the cumulative year-on-year electricity consumption increased in March 2020 and then fell to almost zero by the end of 2020 (see Figure 1).

< Figure 1 about here >

The use of the digital platform contributed to epidemic prevention and boosted the economy and social development in Jiaying. As a digital platform, Weijiayuan was first

initiated by the Jiaxing municipal government in September 2019. Designed as a mini-program on WeChat, a popular social media platform in China, Weijiayuan allows each citizen to join online groups by scanning a QR code with their real-name registration. This allows each family to connect at a low cost. Every citizen on Weijiayuan is allowed equal opportunities to participate in the public service system by receiving community service notices, delivering (receiving) public services, and engaging in public affairs online.

By the end of 2020, Weijiayuan had 1,740,000 adult citizen users in Jiaxing. The vitality rate⁴ of citizen participation on Weijiayuan increased from 3% in December 2019, before COVID-19, to 21% in February 2020, during the first days of the emergency. It decreased to 6% in the first month after the COVID-19 lock-down ended as people left their homes to celebrate the end of quarantine and increasingly preferred offline activities. Nevertheless, people in Jiaxing came back to Weijiayuan again in May 2020 and the vitality rate of citizen participation on Weijiayuan reached 30% (See Figure 2).

< Figure 2 about here >

For its significant contributions to emergency management during the COVID-19 crisis and the achievement of transformative resilience afterward, the Jiaxing City and its innovative use of Weijiayuan during and post the COVID-19 crisis provide a unique

⁴ The platform's vitality rate of citizen participation is measured by the number of monthly visitors divided by the total number of registered users on Weijiayuan.

opportunity in understanding how government-sponsored digital platforms may help build resilient public administration and the conditions that facilitate such a transformation.

Data and methods

Our data come from two sources: interviews with government officials and community members in Jiaxing, and user activity data on Weijiayuan before, during, and after the COVID-19 responses from the Jiaxing government. The authors conducted 83 semi-structured interviews with top government officials (3), agency directors (16), civil servants (24), NGO leaders (10), and ordinary citizens (30) from February 18 to December 31, 2020 (See Table 1). The interviews lasted from 30 to 60 minutes. To triangulate the responses from multiple parties, the same set of questions were asked about Weijiayuan's role in responding to COVID-19 and in the provision of public services after the crisis passed.

A hybrid approach of deductive and inductive coding and theme development was implemented to analyze the interview transcripts. First, a code manual template was developed through two coding themes: recovery resilience during COVID-19 and transformative resilience after COVID-19. Second, segments of text were classified in line with their relevance to each of the two themes and sorted accordingly. Inductive codes were then assigned to these sorted segments and subsequently clustered into categories under each theme. The conditions that facilitated the transition from recovery resilience to transformative resilience were analyzed by comparing the data of two

themes. Therefore, theory-driven themes and data-driven codes are integrated into the data analysis.

< Table 1 about here >

Case analysis and empirical findings

How did Weijiayuan help Jiaxing build recovery resilience during COVID-19?

As Jiaxing responded to the COVID-19 emergency, Weijiayuan launched a new service platform, “The Epidemic Online”. It included 11 public service programs, such as “The Dynamic of COVID-19” “Online Registration for Returning to Jiaxing” and “Volunteer Enrollment”⁵. Weijiayuan let every citizen participate in epidemic prevention and control online and gave them accesses to community services with non-regional barriers 24-hours a day. For example, during the quarantine period, 1,118 people asked for masks and 583 people succeeded in getting masks through Weijiayuan. One resident from Jiashan County said:

“On the night of 10 February 2020, I sent the help information of having one mask in “The Epidemic Online”. The Weijiayuan informed me within 10 minutes that my neighbors had dropped their masks in my room mailbox”⁶.

The data from Weijiayuan showed more than 60,000 masks were exchanged through the online programs “Neighborhood Mutual Assistance” and “Making an

⁵ Other public service programs include “Neighborhood Mutual Assistance” “Making an Appointment for a Mask” “The Need for Community Services” “Psychological Consultation” and “Service Consultation”.

⁶ Interview with one resident from Jiashan County of Jiaxing on 11 December 2020.

Appointment for a Mask”. Under the “Service Consultation” program, citizens’ questions about the pandemic were answered in real-time online. On average, there were more than 400 daily citizen service consultations. More than 8,000 residents registered as volunteers in the “Volunteer Enrollment” program to check the health and measure the body temperatures of people coming into their communities. During the quarantine, many people felt nervous and depressed. 252 counselors provided free online services through the “Psychological Consultation” program of Weijiayuan, helping citizens find suitable psychological care. By the end of March 2020, 3,142 citizens were getting online psychological counseling services in Jiaxing.

How did Weijiayuan help Jiaxing build transformative resilience after COVID-19?

Beginning 2 March 2020, Jiaxing's epidemic prevention and control were returned to normal. The government leaders of Jiaxing then sought to develop new programmes of public service on Weijiayuan for the changing needs of community residents. One of the officials from Jiaxing Municipal Political and Legal Committee said:

“We added many daily community services, such as dispute resolution, community autonomy and others in Weijiayuan to promote online public service delivery. Weijiayuan improved the capacity to extend service content from pandemic control forward to daily public services”⁷.

In the field of community service, Weijiayuan expanded and renamed the “Epidemic Online” program as the daily community service program “Smart 96345”. The “Volunteer Enrollment” program which was set up to combat COVID-19 was

⁷ Interview with the managing official from the Jiaxing Municipal Political and Legal Committee on 6 October 2020.

upgraded after the crisis to “Volunteer Services” where voluntary hours could be recorded in the Time Bank. The new program allows volunteers to provide services to the disabled, the elderly, and the children. One resident from Tongxiang county said:

“I was a temporary volunteer, measuring the temperature of the people entering our community during the COVID-19. Now, I am a frequent volunteer for the elderly and the children since my voluntary hours could also be saved as points in the “Time Bank” where points could be redeemed for goods and services that I need”⁸.

Furthermore, Weijiayuan began listing common services such as water and electricity maintenance, door and window repair, and housekeeping, so that community residents could order daily services online from qualified providers. One resident from Nanhu District said:

“Before the COVID-19, I had to look for those services one by one through phone calls, and the quality of services varied greatly. Now I could see all service providers in Weijiayuan and order one as I want. It also has the evaluation and feedback accesses to ensure high quality of service delivery”⁹.

In the field of community dispute mediation, Weijiayuan added two more programs, the “Voice of the Community” and the “Reconciliation Code”, to mediate and resolve disputes online. One official mentioned:

“These two innovative programs were inspired by the COVID-19. During the COVID-19, contestations accumulated and could not be resolved offline since residents were isolated at home.

8 Interview with one resident from Tongxiang County, Jiaxing on 29 October 2020.

9 Interview with one resident from Nanhu District, Jiaxing on 23 September 2020.

We thought the voice of the community must be heard and disputes should be resolved online”¹⁰.

Residents can submit their complaints through their mobile phones. By September 2020, 181 appeals from residents had been accepted, and 179 were successfully solved online. One resident from Jiashan County, Jiaxing said:

“This was not possible in the past. Before COVID-19, the public had to go down the line to find village cadres, town leaders, all the way to the county and municipal government, and spent a lot of time with no results. Now my complaint could be sent out through the Voice of the Community in the Weijiayuan and I will get responses from the government agencies in due time”¹¹.

To enable citizens to track the progress of their complaints in real-time, Weijiayuan developed the “Reconciliation Code” program. Once the complaint is submitted to the “Reconciliation Code” program, a QR code is generated to help the government and the citizen to track its status and progress. One community resident from Pinghu County said:

“The Reconciliation Code makes me feel secure because I can keep track of the progress and results of my complaint about factory noise at night and even evaluate the result processed afterward. As the institution design of Weijiayuan, my feedback is an important indicator for evaluating the performance of environmental agency officials. Furthermore, I could use the reconciliation code as evidence to urge the government to deal with my complaint efficiently. If the government did not solve the problem, I will expose this evidence on the social media”¹².

¹⁰ Interview with a managing official from the Jiaxing Municipal Political and Legal Committee on 21 October 2020.

¹¹ Interview with one resident from Jiashan County, Jiaxing on 12 December 2020.

¹² Interview with one resident from Pinghu County, Jiaxing on 10 December 2020.

In the field of community governance, Jiaxing added “The People’s Council” and “The Counsellor's Council” programs to improve community self-governance in Weijiayuan, so that every resident could participate in community governance online at any place and time. For community governance affairs, residents are encouraged to vote, express opinions, and propose recommendations through Weijiayuan. “The People’s Council” and “The Counsellor's Council” collect all issues and discuss them with representative residents each month. After these discussions, the issues and decisions are published online. One village counsellor from Nanhu District said:

“One resident once proposed one message with photos in Weijiayuan: To protect our living environment, please do not let the corridors of the building be piled up with debris and rubbish. When I saw this message in Weijiayuan, I regarded it as a very good idea and forwarded it to “The Counsellor's Council” for open discussions. Two days later, we set a community rule of keeping the corridor clean to reward whistleblowers and punish violators.”¹³

Four conditions facilitated Weijiayuan’s critical role in helping Jiaxing transition from recovery resilience to transformative resilience

Although digital platforms were expected to play critical roles during the COVID-19 pandemic, their successful transition and continued growth were not automatic. Many platforms flourished during the pandemic because of the emergent needs generated by social distancing and stay-at-home orders. But, most of those platforms disappeared or had a significant drop in usership after local governments relaxed the emergency

¹³ Interview with one village staff member from Nanhu District, Jiaxing on 23 September 2020.

measures (Cobbe & Bietti 2020). We propose the successful transition of Weijiayuan from recovery resilience to transformative resilience was facilitated by the deliberate integration and embeddedness of four key conditions in the design of the digital platform. They are: adopting and experimenting digital platforms with public entrepreneurship, achieving a critical mass of usership, incentivizing citizen coproduction of public services, and generating accountability for government responsiveness (See Figure 3). As a result, Weijiayuan now connects government to distributed communities of citizens and other stakeholders to scale up collaborative governance, leverage public and private resources, and improve government performance and accountability.

< Figure 3 about here >

First, public entrepreneurship enabled and pushed public managers to innovate both the technology and organizational structure to adopt and develop digital platforms. Public managers of Jiaxing aimed to build an exemplar city in China that opens more pathways for interactions between government and the public beyond top-down collection of citizen feedbacks and suggestions. Also, citizens usually have to endure long and complex procedures to make their voices heard by public managers.

As a result, public managers in Jiaxing transformed these existing patterns of interaction by taking creative steps to launch the Weijiayuan platform. One of the city's top leaders said, "The innovation of establishing the Weijiayuan platform aims to

ensure citizens voice their public services need directly and timely toward government agencies through the adoption of technology”¹⁴. These were lofty goals and difficult to accomplish because of short-run and long-term performance issues. In order to create Weijiayuan, a completely new digital platform, Jiaxing’s leadership got technology support from private sectors, mobilized various government agencies, and clarified the need to involve the public.

Second, public managers leveraged the response to the COVID-19 crisis as an opportunity to achieve a critical mass of usership on the Weijiayuan platform. For any digital platform, the flow and activity levels of its users are the keys to its success. This is also true for government-sponsored digital platforms. By December 2020, the vitality rate of citizen participation in Weijiayuan reached 30%, which means there were more than 522,000 citizens participating and over 14,000,000 monthly visits to Weijiayuan in Jiaxing¹⁵. Without a critical mass of users from communities in Jiaxing, Weijiayuan would not have become an effective platform during and after the COVID-19 crisis.

As a reference point, when Weijiayuan was first introduced to local communities in Jiaxing before the COVID-19 crisis, most citizens did not see its value. Only 52,200 citizens were actively participating in Weijiayuan in December 2019, accounting for 3% of the total registered population of Jiaxing¹⁶. Many citizens regarded it as an extra burden and a potential violation of their privacy because the platform requires real-name ID registration. However, as a digital governance platform established by the

¹⁴ Interview with one municipal leader of Jiaxing city on 10 December 2020.

¹⁵ Data from the internal “The Annual Report of Jiaxing Municipal Governance in 2020”.

¹⁶ Data from the internal “The Annual Report of Jiaxing Municipal Governance in 2019”.

government, Weijiayuan was empowered as the official platform of the local government's response to COVID-19. For example, daily information about COVID-19 infections, daily reports of citizen health, online registration for returning citizens, and the volunteer assistance portal. Citizens then became more cooperative and registered for and used Weijiayuan during the COVID-19 crisis. The usership jumped from 3% of the total population before the COVID-19 crisis to 30% during the COVID-19 crisis. This critical mass of usership made it possible for Weijiayuan to transition from an emergency response based digital platform to a public governance based digital platform that fundamentally change how citizens in Jiaying engaged in public affairs.

In other words, the success of Weijiayuan in building recovery resilience became a type of critical resource, allowing it to continue functioning and building transformative resilience after the crisis. Without a critical mass of usership built during the COVID-19 response, neither of the following two conditions would work. Therefore, creatively leveraging the crisis to launch and implement the digital platform proved to be key to Weijiayuan's success in building both recovery resilience and transformative resilience.

Third, public managers integrated an incentive point system into the design of the Weijiayuan platform to mobilize online stakeholder engagement. Even with compulsory requirement of user registration during the crisis, Weijiayuan could not build transformative resilience if citizens were not active on the digital platform. Weijiayuan adopted a combination mechanism of positive incentives and negative constraints. It encouraged citizens to earn points by participating in delivering public

services in communities. Points were deducted if citizens violated community agreements and regulations. Points were also linked to citizens' bank credit for loans.

One citizen *from Jiashan County* said:

*"I got a loan of 100,000 RMB from the Bank of China without any guaranty requirement because I have already earned more than 10,000 points in Weijiayuan. This is not possible without Weijiayuan"*¹⁷.

To incentivize citizens to use points in exchange for services, the government included other stakeholders like shops, gyms and supermarkets to join the point system. Those stakeholders became exchange sites for points, providing residents with goods and services (See Figure 4). One supermarket manager from Jiashan County said:

*"As a supermarket manager, I am very happy to join the points system in Weijianyuan because it could help attract more guests coming to my supermarket. It is very competitive to apply for joining the point system in Weijiayuan. You know, it is a free but effective advertisement for merchants who join it."*¹⁸

< Figure 4 about here >

As of September 2020, Jiaying had set up 5277 exchange sites for Weijiayuan points. They have been exchanged more than 547 million times. Citizens in Jiaying are enthusiastic about earning points through delivering community services. One young

¹⁷ Interview with one resident from Jiashan County, Jiaying on 12 December 2020.

¹⁸ Interview with one supermarket manager from Jiashan County, Jiaying on 11 December 2020.

resident from Tongxiang County said:

“I join one voluntary organization to read books for children in the community on weekends. Sometimes I just feel tired on the weekend and do not want to do the voluntary work. However, 50 Weijiayuan points for each week’s voluntary work attract me a lot and I have collected more than 300 points to exchange Lego blocks in the supermarket for community children as a reward for completing reading tasks. So far, I have enjoyed staying with children every weekend”¹⁹.

Fourth, Weijiayuan has improved intergovernmental coordination and performance accountability of public service delivery. The majority of public services in China are delivered through the vertical and horizontal coordination of government agencies. The Jiaxing municipal government coordinates multiple agencies including the municipal political and legal committee, the municipal public security bureau, the municipal emergency management bureau, and others to join Weijiayuan and enhance coordination and implementation among government agencies. One leader of the Jiaxing municipal government said:

“Weijiayuan makes the coordination among agencies much easier. Before COVID-19, citizens had to submit their paper requests for community services, and the application documents circulated among certain agencies for a long time. On the digital platform of Weijiayuan, all agencies could simultaneously approve citizens’ applications and must act within three working days”²⁰.

The Jiaxing municipal government also established a supervision agency to

¹⁹ Interview with one resident from Tongxiang County, Jiaxing on 30 October 2020.

²⁰ Interview with one leader from the Jiaxing municipal government on 22 October 2020.

examine all agencies' performance on Weijiayuan to ensure each community resident's service request got a effective response. For those receiving citizen complaints towards the bad attitudes and delay responses, the annual agency performance assessment would be negatively affected. These institutional designs ensure citizens' complaints and reports are handled via the Weijiayuan platform in a faster and more effective manner, compared with the traditional in-person engagement with public agencies.

Discussions

The COVID-19 pandemic presented communities and countries around the world with extreme challenges. Many in the mass media reported on how public administration innovations emerged during the crisis to help society bounce back and maintain public service resilience. But, many innovations were allowed to fade away as the crisis abated. Our study of China shows the government-sponsored digital platforms that emerged during the COVID-19 crisis were able to adapt and transform themselves after the crisis for the achievement of transformative resilience. The Weijiayuan digital platform was created for the transformational resilience of public services from pandemic control to daily service delivery, dispute mediation, and community self-governance. Our findings suggest that public entrepreneurship, the critical mass of usership, multiple-stakeholder engagement in public service delivery, and accountability mechanisms for government responsiveness are the four key conditions that allowed for this successful transformational resilience.

First, our analysis advances a more nuanced view on the relationship between

digital platforms and city-level public service provision. While previous studies tend to portray a confrontational picture of a public service system, focusing on either the command and centralization responses by governments adopting digital technologies or the subversive capacity of digital platforms distributing government power to multiple stakeholders participating in public service provision (Ansell and Miura 2019; Cai, Jiang and Tang 2020; He, Shi, and Liu 2020; Minard 2015; Shaw, Kim and Hua 2020; Su and Meng 2016; Thornton 2009), our findings suggest that the interaction between the two is not always zero-sum. Digital platforms may help local governments consolidate and decentralize power in public service provision at the same time. The adoption of digital platforms facilitated the consolidation of power for the Chinese government to combat the COVID-19 with its unique features in information collection and dissemination, as well as ensuring accountable public service provision (Gao and Tan 2020). In the meantime, it also helped decentralize public service provision by encouraging citizens and community partners to coproduce public services in multiples stages of the public service provision cycle and ensuring government responsiveness after the crisis passed. As such, the adoption of a digital platform and its critical role in creating transformative resilience provided a path forward towards citizen-oriented and more decentralized public service provision rather than a slide back towards a monocentric model of public service provision based on control-style governance mechanisms, therefore building a more resilience public service provision system.

Second, this article speaks to the literature of public entrepreneurship with the discussion of resilience. The theory of public entrepreneurship proposes four levels of

analysis for studying public entrepreneurship: rules of the games, new public organizations, creative management of public resources, and spillovers from private actions to the public domain (Klein et al. 2009). As governance becomes decentred, distributed, and uncertain, innovation and adaption become key tasks for public entrepreneurship (Ansell and Miura, 2019). However, the existing literature on public entrepreneurship has seldom had a dialogue with the theory of resilience. Our findings show that public entrepreneurship not only initiated the establishment of the digital platform but also innovated its operation for transformative resilience through creating the incentive point system to involve citizens and the private sector. Faced with an economy and society rebuilding after COVID-19, public entrepreneurs must keep their eyes focusing on transformative resilience.

Third, our article contributes to the relationship between platform government and transformative resilience. Several recent studies have already shown that the use of digital technologies to enable more participatory government and to solve collective problems at the city, region, national, and international levels (O'Reilly 2011; Brown et al. 2017), while collaborative value creation is expedited through the technological capabilities provided in the platform governments (Huang and Yu 2019; Kim et al. 2021). However, how to keep the platform government's sustainability and its success of transformative resilience in the public service delivery is not explored. Our findings suggest that the digital platform created collaborative value and facilitated the participation of stakeholders in different sectors to achieve transformative resilience of public service system. Government-sponsored digital platforms encompass the

technical architecture, the essential aspects of trust in government, market dynamics, and organizational forms to build public service resilience. In other words, these digital platforms make it possible for local governments to achieve transformative resilience.

Finally, this article also contributes to the literature on government nonelectoral responsiveness. Most studies show that the government responsiveness in the non-Western political system like China is at a low rate because the public service demands expressed by citizens will not be systematically taken into account by the government in the absence of formal electoral accountability (Chen et al. 2016; Distelhorst and Hou 2017; De Almeida 2021; Jiang et.al 2019; Migdal 2021). Our findings suggest that digital platforms improve Chinese government responsiveness through reframing the structure of government accountability and citizen participation. Government agencies were required to give responses within a certain time after a citizen submitted an inquiry or demand for actions. An institutional design of the supervision to examine all government agencies' performance via the digital platform ensures that citizens' preferences must be handled by government agencies in a faster and more effective manner. In the absence of electoral accountability, digital platforms help citizens pressure local governments to restructure the public service delivery system and timely respond to the need of citizens.

Conclusion

As the effects of the COVID-19 global pandemic continue, will the innovations that emerged during the crisis fade away or go on to create public service resilience? The

evidence and experiences of the digital platform innovations in China suggest the potential for a wider and deeper transition of the existing public administration system, from recovery resilience to transformative resilience. By illuminating the conditions under which digital platforms help cities transition from recovery resilience to transformative resilience, this article aims to guide researchers and practitioners towards the opportunities presented by the crisis so they can build capacity for lasting systematic change and innovation.

Our article contributes to the public management literature by distinguishing two forms of resilience—recovery resilience and transformative resilience—and links them to resilient public administration. We illustrate the conditions under which government-sponsored digital platforms help transform the existing system of public administration, both during and after the crisis. It answers the call of existing public management research to approach resilience beyond crisis and disaster management (Boin and Eeten 2013; Boin and Lodge 2016; Duit 2016). In addition, we offer a more nuanced understanding of the relationship between top-down control and compliance-based governance during the peak of the crisis and citizen-centered collaborative governance after the crisis. Our findings suggest these two styles of governance are not necessarily in contradiction. By dramatically increasing the number of users on digital platforms, compliance-based governance mechanisms during the crisis create a unique window of opportunity for the transformation of post-crisis governance in public service provision. Public entrepreneurship capitalized this opportunity by experimenting and integrating multiple design principles embedded in these platforms to transform the existing public

service provision system so that the opportunity would not be wasted after the crisis is over. In fact, many digital platforms for contact tracing were not widely adopted and used anymore after the COVID-19 crisis. The number of users is an important yet not sufficient condition for success. All four conditions need to be met for digital platforms to contribute to transformative resilience. This is also a key insight that could travel beyond China and inform COVID-19 response and administrative reforms in other countries.

Our article has limitations that create ample opportunities for future research. First, Jiaying is a special case. It was a pioneer in using digital platforms to respond to COVID-19 and transform the existing public administration system after the crisis. It is also located in one of the most developed provinces in China, which gave it unique advantages in using digital platforms. Can Jiaying's practices travel to other regions in China or around the world? More research is needed to track the adoption and implementation of digital platforms in other regions. In the meantime, China has embraced the idea of digital government and has spotlighted Zhejiang as the exemplar province for other regions to learn from. The growth of digital platforms in China's other regions might be only a matter of time. Future research can be conducted to understand how digital platforms diffuse to other parts of the country.

Second, our study shows the opportunity for government-sponsored digital platforms to enact a more decentralized model of public service provision in China. However, we still need to recognize the risk that the huge amount of data gathered via these platforms might make it easier for the government to control or monitor citizens,

therefore pushing the government back to a control-based model of governance. Or, the availability of these data combined with the distributed decision-making patterns embedded in the digital platforms might push local governments to become more responsive and embrace its role as a platform and the facilitator of multi-stakeholder engagement (Cheng 2020).

Finally, given the available data, we can only assess how Jiaxing is doing at the aggregate level with the implementation of Weijiyuan. As more fine-grained data becomes accessible, future researchers can learn who is being engaged on these platforms. We can then learn whether these digital platforms widen or narrow the digital divide and existing inequities (Xu and Tang 2020). From Jiaxing's experiences, we can see the government designed the functionality of the platform to incentivize both the older generation and the younger working generation to use it. However, will this level of engagement last? How are government-sponsored digital platforms compared to those platforms created by private businesses? What is the future of government-sponsored digital platforms? Will the private sector take over these platforms or will the government continue to control and own them? These are important questions for future studies to tackle.

In the Chinese language, the word "crisis" consists of two words: danger and opportunity. The COVID-19 pandemic certainly presents both. While millions of lives and trillions of dollars have been lost, this crisis also presented a once-in-a-lifetime opportunity to transform our public administration and governance systems. Resilience has to be a key benchmark for public administration. Our research shows the use of

digital platforms, as triggered by a major crisis like COVID-19, does not automatically equate to resilient public administration and public service provision. Key design principles embedded in these digital platforms and visionary public entrepreneurship must be in place for local governments to transition from recovery resilience to transformative resilience of their public service provision system.

References

- Ansell, C., and J. Torfing. 2015. "How does collaborative governance scale?" *Policy & Politics* 43(3): 315-329.
- Ansell, C., and A. Gash. 2018. "Collaborative platforms as a governance strategy." *Journal of Public Administration Research and Theory* 28(1): 16-32.
- Ansell, C., and S. Miura. 2020. "Can the power of platforms be harnessed for governance?" *Public Administration* 98(1): 261-276.
- Ansell, C., Sørensen, E., and J. Torfing. 2021. "The COVID-19 pandemic as a game changer for public administration and leadership? The need for robust governance responses to turbulent problems." *Public Management Review* 23(7): 949-960.
- Asgarkhani, M. 2005. "Digital government and its effectiveness in public management reform: A local government perspective." *Public Management Review* 7(3): 465-487.
- Berkes, F. and H. Ross. 2012. "Community Resilience: Toward an Integrated Approach." *Society & Natural Resources* 26(1): 5-20.
- Boin, A., and M. Eeten. 2013. "The resilient organization." *Public Management Review* 15(3): 429-445.
- Boin, A., and M. Lodge. 2016. "Designing resilient institutions for transboundary crisis management: A time for public administration." *Public Administration* 94(2): 289-298.
- Bovaird, T. 2007. "Beyond engagement and participation: User and community coproduction of public services." *Public Administration Review* 67(5): 846-860.
- Brown, A., J. Fishenden, M. Thompson, and W. Venters. 2017. "Appraising the impact and role of platform models and Government as a Platform (GaaP) in UK Government public service reform: Towards a Platform Assessment Framework (PAF)." *Government Information Quarterly* 34(2): 167-182.
- Cai, C., W. Jiang, and N. Tang. 2021. "Campaign-style crisis regime: how China responded to the shock of COVID-19." *Policy Studies*, <https://doi.org/10.1080/01442872.2021.1883576>.
- Chelleri, L. and A. Baravikova. 2021. "Understandings of urban resilience meanings and principles across Europe." *Cities* 108: 102985.

Chen, J., Pan, J., and Y. Xu. 2016. "Sources of authoritarian responsiveness: A field experiment in China." *American Journal of Political Science* 60(2): 383-400.

Cheng, Y. 2019. "Exploring the role of nonprofits in public service provision: Moving from coproduction to cogovernance." *Public Administration Review* 79(2): 203-214.

Cheng, Y. 2020. "Bridging the Great Divide: Toward a Comparative Understanding of Coproduction." *Journal of Chinese Governance* 5(1): 1– 7.

Cheng, Y., J. Yu, Y. Shen, and B. Huang. 2020. "Coproducing Responses to COVID-19 with Community - Based Organizations: Lessons from Zhejiang Province, China." *Public Administration Review* 80(5): 866-873.

Clark, B.Y., J.L. Brudney, and S. Jang. 2013. "Coproduction of Government Services and the New Information Technology: Investigating the Distributional Biases." *Public Administration Review* 73(5): 687-701.

Cobbe, J. and E. Bietti. 2020. "Rethinking Digital Platforms for the Post-COVID-19 Era", <https://www.cigionline.org/articles/rethinking-digital-platforms-post-covid-19-era>.

Dijck, J. van, de Waal, M., and T. Poell. 2018. *The platform society: Public values in a connective world*. Oxford, UK: Oxford University Press.

Distelhorst, G., and Y. Hou. 2017. "Constituency service under nondemocratic rule: Evidence from China." *The Journal of Politics* 79(3): 1024-1040.

De Almeida, D. R. (2021). "Civil society representation and digital accountability in Brazilian participatory institutions." *Journal of Chinese Governance* 6(1): 81-109.

Duit, A. 2016. "Resilience thinking: Lessons for public administration." *Public Administration* 94(2): 364-380.

Edelmann, N., and I. Mergel. 2021. "Co-Production of Digital Public Services in Austrian Public Administrations." *Administrative Sciences* 11(1): 22.

Falco, E., and R. Kleinhans. 2018. "Beyond technology: Identifying local government challenges for using digital platforms for citizen engagement." *International Journal of Information Management* 40: 17–20.

Folke, C., S. R. Carpenter, B. Walker, M. Scheffer, T. Chapin, and J. Rockström. 2010. "Resilience thinking: integrating resilience, adaptability and transformability." *Ecology and society* 15(4): 20.

- He, A. , Y. Shi, and H. Liu. 2020. "Crisis Governance, Chinese Style: Distinctive Features of China's Response to the Covid-19 Pandemic." *Policy Design and Practice* 3(3): 242-258.
- Huang, B., and J. Yu. 2019. "Leading digital technologies for coproduction: the case of 'visit once' administrative service reform in Zhejiang Province, China." *Journal of Chinese Political Science* 24(3): 513-532.
- Holling, C. S. 1973. "Resilience and stability of ecological systems." *Annual review of ecology and systematics* 4(1): 1-23.
- Jiang, J., Meng, T., and Q. Zhang. 2019. "From Internet to social safety net: The policy consequences of online participation in China." *Governance* 32(3): 531-546.
- Klein, P. G. 2008. "Opportunity discovery, entrepreneurial action, and economic organization." *Strategic Entrepreneurship Journal* 2(3): 175-190.
- Kim, S., Andersen, K.N. and J. Lee. 2021. "Platform Government in the Era of Smart Technology." *Public Administration Review*, <https://doi.org/10.1111/puar.13422>
- Li, H. 2020. Communication for coproduction: a systematic review and research agenda. *Journal of Chinese Governance*, 5(1), 110-135.
- Linders, D. 2012. From e-government to we-government: Defining a typology for citizen coproduction in the age of social media. *Government information quarterly*, 29(4), 446-454.
- MacKinnon, D., and K. D. Derickson. 2013. "From resilience to resourcefulness: A critique of resilience policy and activism." *Progress in human geography* 37(2): 253-270.
- Mansell, R. 2017. Bits of power: Struggling for control of information and communication networks. *Journal of the Political Economy of Communication* 5(1): 2-29.
- Migdal, J. S. 2021. "The question of authority." *Journal of Chinese Governance* 6(3): 333-350.
- Meerow, S., J. P. Newell, and M. Stults. 2016. "Defining urban resilience: A review." *Landscape and urban planning* 147 (2016): 38-49.
- Mei, C. 2020. "Policy style, consistency and the effectiveness of the policy mix in China's fight against COVID-19." *Policy and Society* 39(3): 309-325.

Minard, P. 2015. "Does ICT Diffusion Increase Government Responsiveness in Autocracies? An empirical assessment of the political implications of China's Internet." *Journal of Contemporary China* 24(96): 1048-1069.

Gao, X., & Tan, J. 2020. From Web to Weber: Understanding the case of "One-Go at Most" as ICT-driven government reform in contemporary China. *China Review*, 20(3), 71–98

Gao, X., and J. Yu. 2020. "Public governance mechanism in the prevention and control of the COVID-19: information, decision-making and execution." *Journal of Chinese Governance* 5(2): 178-197.

Gazley, B., LaFontant, C., and Cheng, Y. 2020. "Does coproduction of public services support government's social equity goals? The case of US state parks." *Public Administration Review*, 80(3), 349-359.

Osborne, S.P., Radnor, Z. and K. Strokosch. 2016. "Co-production and the co-creation of value in public services: a suitable case for treatment?" *Public Management Review* 18(5): 639-653.

Ostrom, E., and M. A. Janssen. 2004. "Multi-level governance and resilience of social-ecological systems." In *Globalisation, poverty and conflict*, pp. 239-259. Springer, Dordrecht.

O'Reilly, T. 2011. "Government as a Platform." *Innovations: Technology, Governance, Globalization*, 6(1): 13-40.

Poocharoen, O.O. and B. Ting. 2015. "Collaboration, co-production, networks: Convergence of theories." *Public Management Review* 17(4): 587-614.

Quick, K.S., and M. S. Feldman. 2014. "Boundaries as junctures: Collaborative boundary work for building efficient resilience." *Journal of Public Administration Research and Theory* 24 (3): 673-695.

Shaw, D.R., K. Achuthan, A. Sharma, and A. Grainger. 2019. "Resilience orchestration and resilience facilitation: How government can orchestrate the whole UK ports market with limited resources—the case of UK ports resilience." *Government Information Quarterly* 36(2): 252-263.

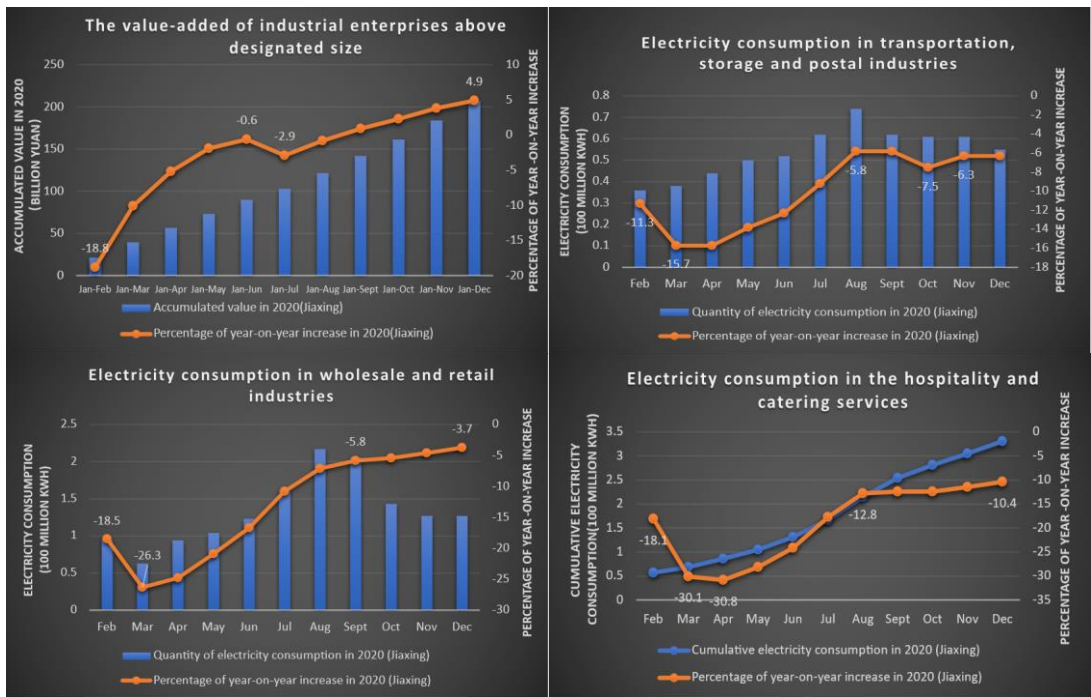
Shaw, R. , Y. Kim, and J. Hua . 2020. "Governance, Technology and Citizen Behavior in Pandemic: Lessons from COVID-19 in East Asia." *Progress in Disaster Science* 6: 100090.

Steen, T., and T. Brandsen. 2020. "Coproduction during and after the COVID-19

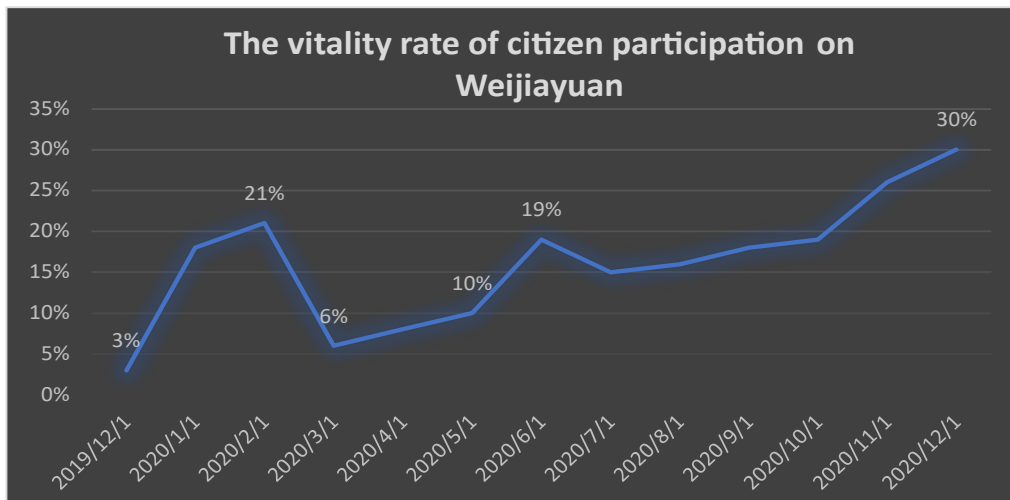
- Pandemic: Will It Last?" *Public Administration Review* 80(5): 851-855.
- Su, Z., and T. Meng. 2016. "Selective responsiveness: Online public demands and government responsiveness in authoritarian China". *Social science research* 59: 52-67.
- Thornton, P. 2009. "Crisis and Governance: SARS and the Resilience of the Chinese Body Politic." *The China Journal* 61: 23–48.
- Toonen, T. 2010. "Resilience in public administration: the work of Elinor and Vincent Ostrom from a public administration perspective". *Public Administration Review* 70(2): 193-202.
- Voorberg, W., Jilke, S., Tummers, L., & Bekkers, V. 2018. "Financial rewards do not stimulate coproduction: Evidence from two experiments." *Public Administration Review*, 78(6): 864-873.
- Wang, X., and Y. Cheng. 2021. "Cross the river by feeling the stones: How did nonlocal grassroots nonprofits overcome administrative barriers to provide quick responses to COVID-19?" *Public Administration and Development*, <https://doi.org/10.1002/pad.1908>.
- Xu, C. K., and T. Tang. 2020. "Closing the Gap or Widening the Divide: The Impacts of Technology-Enabled Coproduction on Equity in Public Service Delivery." *Public Administration Review* 80 (6): 962-975.
- Zou Y., and W. Zhao. 2021. "Neighbourhood governance during the COVID-19 lockdown in Hangzhou: coproduction based on digital technologies." *Public Management Review*, DOI: 10.1080/14719037.2021.1945666

Figure 1: The Trend of Key Indicators for Jiaxing’s Economic Activities

from February 2020 to December 2020



**Figure 2: The Trend of the Vitality Rate of Citizen Participation on Weijiayuan
from December 2019 to December 2020**



Note: The vitality rate of citizen participation is measured by the number of monthly visitors divided by the total registration number in Weijiayuan.

Figure 3: Four Conditions that Facilitated the Transition from Recovery Resilience to Transformative Resilience

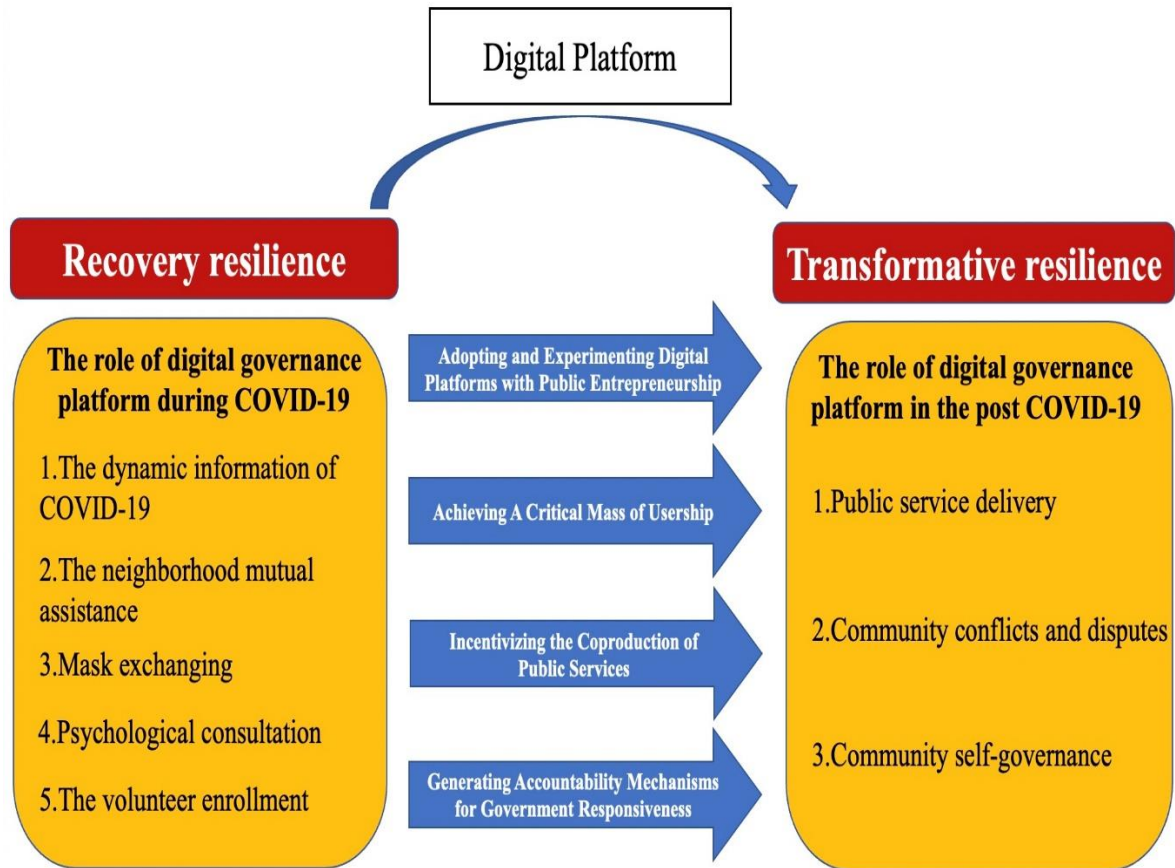


Figure 4: Community Residents Using Weijiayuan Points to Exchange Commodities on the Exchange Sites



Table 1: The Detailed Breakdown of Semi-Structured Interviews

Numbers	Top government officials	Agency directors	Civil servants	NGO leaders	Ordinary citizens
Jiaying municipal level	3	3	4	0	0
Jiashan county	0	5	6	2	10
Tongxiang county	0	4	6	4	8
Pinghu county	0	2	4	2	8
Nanhu district	0	2	4	2	6
Total	3	16	24	10	30