

Co-Production in Response to COVID-19: A Case Study of Urban Village Community Resilience During the Pandemic in Indonesia

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UDK: 316.334.55(594)
351.82(594)
352.075(594)

<https://doi.org/10.31297/hkju.26.2.1>

Original paper / izvorni znanstveni rad

Received / primljeno: 27. 8. 2023.

Accepted / prihvaćeno: 23. 3. 2026.



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This study provides an understanding of community–government collaboration in responding to disasters from the early stages, including the development of institutional arrangements, planning, strategy, communication and co-ordination, capacity-building efforts, leadership, and accountability mechanisms. The paper adopts a case study approach to examine the co-production process and the public values that emerge from it. The analysis is based on qualitative data collected through 20 semi-structured interviews, mass media reports, and regulatory documents. The findings demonstrate that urban village communities play an important role in responding to COVID-19 through co-production. Their central role can be observed from the early stages of designing co-production arrangements, collaborating with professionals, participating in decision-making, ensuring accountability, and taking part in COVID-19 response training. This research contributes to the literature by demonstrating how communities can employ co-production, in collaboration with local governments, to mitigate the impacts of the COVID-19 crisis.

Keywords: co-production, COVID-19, urban village community, crisis resilience

1. Introduction

Since early 2020, the COVID-19 pandemic has shaken governments around the world. The rapid spread of the virus required governments to take anticipatory action. Government responses varied considerably across countries, with some responding quickly and others more slowly (Forster & Heinzl, 2021). Many governments struggled when confronted with the COVID-19 outbreak (Djalante et al., 2020; Farizi & Harmawan, 2020). These difficulties included hesitation in implementing policy responses, challenges in tracking cases, a lack of transparency in the management of case data, and limited resources (Nugroho & Syarif, 2021).

One factor that hindered governments in responding effectively to COVID-19 was limited state capacity. Countries that have struggled to respond to the pandemic often face difficulties in organising bureaucratic

structures and utilising and allocating resources (Yen et al., 2022). State capacity plays a crucial role in determining how effectively a country can respond to a pandemic (Serikbayeva et al., 2021a). Countries with limited capacity are more likely to become overwhelmed by a pandemic and experience higher fatality rates. Limited state capacity to respond to a rapidly evolving pandemic requires governments to collaborate with non-governmental actors in the delivery of public services (Abubakar et al., 2021). Co-production has emerged as one of the approaches used to build trust, foster collaboration, and mobilise communities during COVID-19 (Andersen et al., 2020). Within the context of public services, co-production involves the participation of citizens or civil society in the provision of public services with the aim of creating public value (Alford & Yates, 2015).

Co-production as a concept makes an essential contribution during pandemics by facilitating stakeholder participation in addressing public problems (Steen & Brandsen, 2020b). Furthermore, co-production can assist in managing crises by encouraging citizen participation and strengthening communities' ability to cope with the challenges posed by a pandemic. Co-production during a pandemic also enables the delivery of health services through the involvement of multiple stakeholders (Pestoff & Saito, 2022). In other contexts, collaboration among communities, governments, industries, and individual citizens through co-production has proven effective in addressing the spread of COVID-19 (Yeo & Lee, 2020). Community participation in co-production initiatives with local governments is usually based on the principle of volunteerism (Miao, Schwarz, & Schwarz, 2021a). Various researchers have applied the concept of co-production as a tool to analyse resilience in the face of disasters, including the COVID-19 pandemic. A study from Wuhan (Tu, 2022), the initial epicentre of the outbreak of COVID-19, demonstrated that co-production emerged through the spontaneous actions of self-organised groups responding to the pandemic. Similarly, other studies suggest that resilience during COVID-19 was shaped by the combined efforts of state and citizen actors. In particular, collaboration between these actors was based on government mobility measures, citizen compliance, and community self-organisation (Zhao et al., 2024). In addition, collaboration among citizens, volunteers, and government actors in emergency services can be strengthened and increased through digitalisation (Pilemalm & Alkusaibati, 2024). Co-production can also be used strategically to mitigate conflict during public service delivery in times of crisis (Wang, Zhang, & Ran, 2025).

Although co-production has generated considerable optimism, the literature suggests that its implementation in public service delivery during the COVID-19 era is not without risks. If not implemented effectively, co-production may lead to public distrust, particularly in relation to digital-based contact-tracing efforts (Polzer & Gomcharenko, 2022). Moreover, the use of digital technologies within co-production arrangements may have negative consequences, including threats to freedom of expression and data misuse. Other studies have also shown that the use of co-production to enhance resilience during COVID-19 does not always produce positive outcomes for all members of society, particularly vulnerable groups (Zhao et al., 2024). Drawing on the existing literature on co-production, this study suggests that the concept of co-production can be utilised to mitigate the impacts of the COVID-19 crisis within the context of local government in developed countries. However, despite the theoretical development of the subject, a comprehensive framework offering insights into the response of communities to the spread of the virus has yet to be established.

The choice of Surabaya for this study was based on the fact that it was one of the areas most affected by COVID-19, recording 1,302 deaths (Faiq, 2021). By mid-August 2020, according to the data from the COVID-19 Task Force, Surabaya recorded the highest number of deaths in Indonesia, accounting for 8.62% of all cases (Mufarida, 2020). The Surabaya City Government sought to respond to the pandemic by implementing the concept of co-production in the *Kampung Tangguh Jogo Suroboyo* programme, which relied on the participation of urban village communities (Law on COVID-19 Surabaya, 2020). The *Kampung Tangguh Jogo Suroboyo* programme played a central role in the response as COVID-19 cases continued to rise in Surabaya (Kurnia, 2021). Based on the literature reviewed and the empirical evidence presented above, this article addresses the following research question: How is co-production implemented in responding to COVID-19 in Surabaya, Indonesia?

2. Literature Review: Co-Production in Crisis Response

The COVID-19 pandemic has changed systems across the public sector, including public services. The turbulent conditions created by the pandemic forced governments to develop more robust solutions within the

context of governance (Ansell, Sørensen, & Torfing, 2021). To adapt to uncertain circumstances, governments have had to introduce various innovations in the public sector to ensure that citizens continue to receive public services (Hossain & Yasmin, 2022). During the COVID-19 era, it became common for governments to collaborate across organisations with other government bodies, non-governmental actors, and citizens (Andersen et al., 2020; Bentzen & Torfing, 2022; Steen & Brandsen, 2020a). The limited capacity of government as a single actor to address public problems has been accompanied by increased citizen participation in the creation of public value through public services (Alford, 2009). Discussions of co-production therefore extend beyond government actors to include the role of stakeholders such as the private sector and citizens in public service activities (Campanale, Mauro, & Sancino, 2021; McMullin, 2021). Participation in the co-production of public services also takes various forms, involving individuals, groups, or collectives (Nabatchi, Sancino, & Sicillia, 2017). Typically, co-production processes in local government involve the participation of the communities or residents at the micro level (Loeffler & Timm-Arnold, 2021).

However, there is a paucity of studies that discuss co-production and present specific frameworks for crises such as pandemics. Although the framework proposed by Cepiku and colleagues is comprehensive, it is not specifically designed to analyse cases in general (Cepiku et al., 2020a). This study draws on their co-production implementation framework, which outlines the stages of co-production implementation, including institutional arrangements, planning, communication strategies, the management of lay actors, the management of professionals, leadership, and aspects of accountability and performance measurement (Cepiku et al., 2020b). Various dimensions can be developed from this framework to analyse co-production in response to a pandemic.

2.1. Crisis Trigger and State Capacity Limitations

The sudden and rapid spread of the novel strain of coronavirus known as SARS-CoV-2 has had a profound impact on society and the broader environment. The pandemic has given rise to a range of complex public issues, including increased demand for essential services such as health-care, social assistance, and basic logistics (Wang, Zhang, & Ran, 2025). The spread of the virus has also created significant challenges, including limited state capacity and widespread uncertainty. Many policies, which

typically encompass formal rules and procedures, became less effective due to lockdown measures and the resulting reduction in face-to-face interactions. Under such circumstances, governments were required to implement rapid solutions in response to evolving conditions (Carminati, Cavenago, & Mariani, 2023). A review of these developments suggests that governments, traditionally responsible for addressing public problems, became overwhelmed. Government institutional capacity, which had been developed to address more routine challenges, proved insufficient to cope with the complexity of the problems posed by the novel virus.

One solution available to governments in addressing limited state capacity is to rebuild the relationship between the state and society (Chatterji et al., 2024). It can be argued that the state must develop “capacity in motion” by continuing to adapt to the evolving context of the crisis, rebuilding the relationships with society, and mobilising various resources. Such relations between the state and society are geared towards enhancing the capacity to respond to emergencies during a pandemic and towards building public trust (Jamil & Hossain, 2022). One concrete step in this direction is state-led co-production, whereby governments involve volunteers, community organisations, and citizens in building resilience against the spread of the virus (Miao, Schwarz, & Schwarz, 2021a). It is important to acknowledge that co-production is not a short-term endeavour; rather, it requires the development of long-term trust, the inclusion of citizens into decision-making processes, and a more equitable distribution of power and resources (Vinodkumar et. al, 2021).

2.2. Institutional Design for Pandemic Response

The pandemic has fundamentally changed institutional design, rendering structures more inclusive and flexible in their response to crises. The ongoing crisis caused by the novel coronavirus has created a state of uncertainty requiring governments to develop institutional designs capable of regulating the relationship between the state and society. Such designs should include the definition of roles, the establishment of dialogue mechanisms, and the strengthening of coordination among relevant actors (Wang, Zhang, & Ran, 2025). The development of flexible institutional designs requires the establishment of a framework that promotes reciprocal cooperation among actors based on trust (Carminati, Cavenago, & Mariani, 2023). The involvement of non-state actors, including volun-

teers and community organisations, is embedded within local governance structures (Miao, Schwarz, & Schwarz, 2021a).

The involvement of volunteers and community organisations is embedded within local governance structures with the aim of enhancing state capacity without undermining control or policy legitimacy (Miao, Schwarz, & Schwarz, 2021a). In the context of a pandemic that requires digital co-production relationships, all actors must pay greater attention to new forms of inclusivity, power relations, and the quality of participation (Perikangas & Tuurnas, 2024). Institutional design should prioritise accessibility for all actors involved and promote more inclusive patterns of interaction. Accordingly, institutional design must take into account several aspects, including a supportive regulatory framework that provides the legal and regulatory basis for co-production. Furthermore, citizens should be positioned as collaborative actors who complement professional actors on the basis of mutual commitment and shared incentives (Steen & Brandsen, 2020a).

2.3. Participatory Planning and Decision-Making

In the co-production phase of building resilience to the spread of a pandemic, a key instrument is a joint planning mechanism involving multiple actors. The joint planning phase serves as a mechanism that enables various actors, particularly non-governmental actors, to integrate citizens' knowledge and experiences into decisions related to resilience and responses to the spread of the novel coronavirus. Limitations in ideas, concepts, and knowledge in decision-making can be overcome through the active involvement of non-governmental actors, such as citizens, communities, and volunteers, who contribute to the process (Carminati, Cavenago, & Mariani, 2023). Addressing complex situations requires enhanced decision-making capacity characterised by greater flexibility, experimentation, and willingness to integrate diverse cross-sectoral resources (Scognamiglio et al., 2023). The positive impact of participatory planning and decision-making can be seen in the involvement of citizens and local communities in designing pandemic responses that are better suited to local contexts, particularly in situations of limited resources (Cosgrave et al., 2022). One of the prerequisites for participatory planning and decision-making is the existence of an institutional design that provides an inclusive space for all participants, equal access to technology, and high-quality deliberative interactions (Perikangas & Tuurnas, 2024).

2.4. Communication and Coordination During a Crisis

The effectiveness of systems in responding to the challenges posed by a pandemic depends on the quality of communication and multi-actor coordination. Digital platforms have emerged as the most effective means of facilitating multi-actor communication in co-production during a pandemic. In this context, government agencies, communities, and citizens collaborate to establish networks that support citizen-driven production, enabling real-time communication and information exchange (Criado, Guevara-Gómez, & Villodre, 2020). This perspective is consistent with the findings from other studies, which underscore the importance of participatory communication and position citizens as active participants in shaping communication with co-production processes in response to the COVID-19 pandemic (Graffigna et al., 2020). The overarching objective of effective communication is to promote inclusivity, transparency, and responsiveness to the multifaceted cultural and linguistic backgrounds of all participants, thereby ensuring that everyone is able to contribute meaningfully to the process (Tan et al., 2023). In the context of crisis decision-making, the use of information technology as a communication medium functions as a coordination infrastructure across actors, thereby strengthening both vertical and horizontal integration (Uster, 2025). In this particular context, communication is not merely a channel for transmitting information; rather, it serves as a structural mechanism that strengthens systems, enables collaborative production, and fosters collective resilience in the face of a pandemic crisis, even at the micro level.

2.5. Actor Capacity Building

The endeavour to construct a system that fosters resilience in response to the threat posed by pandemics is contingent upon the capacity-building efforts of various actors, including government entities, communities, and individual citizens, which must be pursued in a sustained manner. The capacity of local leaders, volunteers, and communities is identified as a key component of social infrastructure, particularly in instances where state normative mechanisms are centralised and demonstrate a lack of efficiency (Ahmad et al., 2022). Furthermore, the empowerment of citizens through various means, such as capacity-building initiatives, training citizens to engage in dialogue with other actors, and increasing citizen participation in the formulation of emergency regulations, can be benefi-

cial in strengthening policy legitimacy (Wang, Zhang, & Ran, 2025). Citizens who typically adopt a passive stance may spontaneously engage with trust-based communities and utilise local resources to enhance public service resilience in the midst of a crisis (Zhao et al., 2024). Conversely, citizen mobilisation is employed to establish personal safety systems and community resilience (Tu, 2022). The characteristics of actor strengthening are multidimensional, relating to flexibility, the development of multi-actor cooperation capacity within organisations, and social cognitive construction (Sutcliffe et al., 2025).

2.6. Collective Leadership

The crisis has precipitated an evolution in leadership characteristics, transitioning from hierarchical structures to those that are adaptive, collective, collaborative, and pandemic-resilient. The concept of crisis leadership is predicated on the notion of resilient leadership, a term defined by Gius-tiniano et al. (2020) as the ability of a leader to manage stability, change, and flexibility in decision-making. This finding aligns with the preceding assertion that leadership is predominantly facilitative in nature and is distributed through the coordination of various actors (Harmawan et al., 2022). The efficacy of leadership in this regard is predicated on its capacity to function as a facilitator for all relevant actors, mobilising the full complement of resources to ensure collective responsibility in responding to the pandemic (Yeo & Lee, 2021). The characteristics of leadership that emerge during a crisis are not overly rigid in terms of authority and utilise aspects of relationships, trust, and cross-institutional collaboration (Connolly et al., 2023).

2.7. Social Capital Between Actors

Social capital elements, categorised as bonding, bridging, and linking social capital, facilitate communities in mobilising resources, information, and community support (Samutachak et al., 2023). This phenomenon contributes to enhancing the capacity for adaptation and recovery from changing environmental conditions. This pattern has been shown to encourage residents and communities to network voluntarily in response to the pandemic. The social capital aspect also contributes to community compliance with interventions introduced through policies and by par-

ties involved in responding to the pandemic (Choi & Kim, 2024). This is predicated on the premise that the community's trust in other actors is founded on social capital. This finding aligns with the conclusions of other studies, which have demonstrated that social capital can encourage moral compliance and voluntary self-restraint among citizens during crises (Liu & Wen, 2021). These conditions are conducive to facilitating co-production between the state and society, with citizens playing an active role in reducing direct contact among citizens, which has the potential to accelerate the spread of disease.

2.8. Community Resilience and Public Trust

Community participation in addressing various crises has been demonstrated to generate outcomes that include the strengthening of community identity, the cultivation of social solidarity, and the formation of trust networks among crisis management actors (Fledderus, Brandsen, & Hiningh, 2014). In the context of crises such as pandemics, communities have been shown to be a key resource in accelerating pandemic response efforts, including those related to public health and community compliance (Yeo & Lee, 2021). In order to combat the pandemic, community activities can be undertaken in a variety of ways. One such method is the establishment of trust networks among relevant actors. This aspect of trust is a fundamental element that binds actors within the community, enabling them to cooperate, coordinate, and develop adaptive ideas when building resilience to the novel virus. Trust is established through consistent dialogue, collaborative experiences, and a shared sense of purpose among individuals in the community (Wang, Zhang, & Ran, 2025).

3. Methods

This analysis of co-production implementation in response to COVID-19 in Surabaya, Indonesia, was conducted using a case study approach (Priya, 2021). The purpose of using qualitative research methods is to capture various information about the social phenomena under study, the research informants, and the research location (Creswell, 2014). In addition, qualitative research can be used to understand social interactions through the use of in-depth interviews and observations, thereby enabling the identification of clear patterns. A case study is a method used to

examine a phenomenon in a real-life context when the boundaries between the phenomenon and the context are not clearly evident, drawing on multiple sources of evidence (Yin, 2018). This study seeks to explain the response to COVID-19 at the urban community level by utilising the crisis resilience co-production framework developed by the author based on the existing literature. In addition, the period of analysis in this study extends from the onset of the COVID-19 outbreak in Indonesia in February 2020 to July 2022.

3.1. Data Collection

Informants or resource persons in this study were task force officers / COVID-19 response officers and residents who were actively involved in the *Kampung Tangguh Jogo Suboboyo* programme. The data collection process was carried out using a semi-structured interview technique with 20 informants, consisting of members of the COVID-19 Task Force at the *Rukun Warga* level, heads of *Rukun Warga* (RW), heads of *Rukun Tetangga* (RT), and residents involved in handling COVID-19. *Rukun Warga* (RW) and *Rukun Tetangga* (RT) are the lowest levels of local administration in Indonesia and operate under the auspices of the village government. Informants were selected from locations with the highest rates of COVID-19 transmission in several areas of Surabaya, based on the criterion of being responsible for COVID-19 response services at the village level. Moreover, the selection was based on their authority as special officers assigned to handle the pandemic, such as members of the village-level task force.

Semi-structured interviews attempt to ascertain a person's response to a phenomenon by following various guidelines, thereby enabling experiences or phenomena to be revealed (McIntosh & Morse, 2015). Each interview with a resource person lasted between 60 and 90 minutes. Semi-structured interviews were conducted based on the conceptual points presented in Table 1. Informants were selected using a purposive sampling technique, which enables the selection of respondents who are most likely to provide information and data relevant to the research topic. At the same time, secondary data were obtained from research-supporting documents, such as regulations, field documentation, relevant literature, and mass media sources aligned with the research topic, including:

1. Local government regulations: Surabaya Mayor Regulation No. 28 of 2020 concerning "Guidelines for the New Normal Order in the Conditions of the 2019 Corona Virus Disease (COVID-19) Pandemic in the City of Surabaya".

2. Field documentation: Documentation collected from the field, including interview recordings, photographs, and videos.
3. Literature: A variety of relevant books and journal articles supporting the development of the research arguments.
4. Mass media: Several online mass media outlets that reported on COVID-19 and met the research requirements, such as detik.com, jawapos.com, okezone.com, SuaraSurabaya.net, and Republika.com.
5. Government websites: Several official government websites such as Humas.Surabaya.go.id and lawancovid-19.surabaya.go.id.

3.2. Data Analysis

Twenty semi-structured interviews were conducted in person and recorded. The recorded interview data were subsequently transcribed verbatim. Data analysis was performed using narrative analysis. Narrative analysis facilitates an idiographic understanding of qualitative data by examining how individuals organise experiences into stories through plot, characters, and motives, thereby revealing how meaning is constructed and situated within specific social and contextual settings (Sevilla-Liu, 2023). Similarly, narrative analysis in qualitative research explores how meaning is generated through the organisation of events, voices, and perspectives in stories. This enables researchers to capture the procedural dynamics and interpretative dimensions that are often overlooked by variable-centred approaches (Baú, 2016). Data analysis was carried out by comparing the empirical findings from the field with the theoretical concepts employed in the study. Guided by the theoretical framework, the interview transcripts were carefully examined, with particular attention paid to the co-production activities undertaken by the village community in responding to COVID-19. In addition, the analysis sought to examine the relationships established between the village community and the local government.

Table 1: *Overview of 20 interview respondents*

Respondent ID	Position	Type of organisation
Informant 1	Head of 5 th Mojo Hamlet	Urban village community
Informant 2	Head of 6 th Mojo Hamlet	Urban village community
Informant 3	Head of 6 th Gubeng Neighbourhood	Urban village community

Informant 4	Head of 5 th Gubeng Hamlet	Urban village community
Informant 5	Head of 2 nd Kedungdoro Hamlet	Urban village community
Informant 6	Vice Chairman of 2 nd Kedungdoro Hamlet	Urban village community
Informant 7	Head of Kedungdoro COVID-19 Task Force	Urban village community
Informant 8	Gayungan Sub-District Staff	Urban village community
Informant 9	Head of 1 st Ngagel Hamlet	Urban village community
Informant 10	Head of Ngagel COVID-19 Task Force	Urban village community
Informant 11	Head of 6 th Ngagel Neighbourhood	Urban village community
Informant 12	Head of 2 nd Ngagel Neighbourhood	Urban village community
Informant 13	Head of 5 th Ngagel Neighbourhood	Urban village community
Informant 14	Head of 4 th Ngagel Neighbourhood	Urban village community
Informant 15	Head of 1 st Ngagel Neighbourhood	Urban village community
Informant 16	Head of 8 th Ngagel Neighbourhood	Urban village community
Informant 17	Head of 3 rd Ngagel Neighbourhood	Urban village community
Informant 18	Head of 3 rd Kutisari Hamlet	Urban village community
Informant 19	Head of 5 th Kutisari Neighbourhood	Urban village community
Informant 20	Head of 6 th Tenggilis Mejoyo Hamlet	Urban village community

Source: Author based on field interview.

4. Results

In the first part, we discuss the context surrounding the emergence of policies and administrative forms of the *Kampung Tangguh Jogo Suroboyo* programme initiated by the City Government of Surabaya, Indonesia, in response to the spread of COVID-19. This article also seeks to answer the research question presented in the introduction.

4.1. Crisis Trigger and State Capacity Limitations

The emergence of the *Kampung Tangguh Jogo Suroboyo* programme was closely linked to the increasingly critical situation as COVID-19 spread rapidly in Surabaya, Indonesia. The Surabaya City Government required additional capacity to respond to COVID-19 through citizen participation. Indeed, many studies have shown that state capacity and government governance influence the success or failure of COVID-19 response

efforts (Ladiqi, 2020; Serikbayeva et al., 2021b; Wu, Wang, & Zhang, 2021). In response to these circumstances, the Surabaya City Government, under the leadership of Tri Rismaharini, intensified its efforts to implement the *Kampung Tangguh Jogo Suroboyo* programme. Consequently, the municipal government promptly established numerous community-based COVID-19 prevention task forces across various sub-districts, extending to the neighbourhood and urban village levels (Humas Pemkot Surabaya, 2020a).

The legal basis for the implementation of the *Kampung Tangguh Jogo Suroboyo* programme is Surabaya Mayor Regulation No. 28 of 2020 concerning “Guidelines for the New Normal Order in the Conditions of the 2019 Corona Virus Disease (COVID-19) Pandemic in the City of Surabaya” (Surabaya Mayor Regulation No. 28 of 2020 on the New Normal Guidelines in Corona Virus Disease 2019 (COVID-19) Pandemics Situation in Surabaya, 2020). This policy has become the basis of legitimacy for urban village community participation in responding to the pandemic in Surabaya. Administratively, through this mayoral regulation, residents play a frontline role in supervising their local areas and providing input on the implementation of the new normal order. Residents also play a role in reporting COVID-19 cases from their local communities.

The *Kampung Tangguh* programme continued to be implemented under the subsequent mayoral administration of Surabaya, led by Eri Cahyadi, who assumed office in 2021. Citizen participation remained a key component of the Surabaya City Government’s response to the pandemic, particularly during periods of rising cases, such as the spread of the Omicron variant. The *Kampung Tangguh* Task Force at the neighbourhood level was once again activated on a large scale to prevent and control the spread of cases, which continued to increase. To support operational costs of the programme, the Surabaya City Government budgeted incentives of 400,000 rupiah per task force member (Manda Roosa, 2021). However, this funding did not cover all operational expenses, as most of the operational budget for *Kampung Tangguh* was derived from community self-help contributions.

We did not receive any funding from the city government for the operational costs of implementing the resilient village programme. Most of the funding came from self-help initiatives. Assistance provided by the government distributed through the sub-districts was usually in the form of spraying equipment for COVID-19 prevention. As for funding from the city government, four task force members received 400,000 rupiahs per month as a form of compensation. This money was only provided during the administration of

Mayor Eri Cahyadi; during the administration of Mayor Risma, we did not receive it (Kedungdoro, Interview Informant 5).

4.2. Institutional Design

Urban village community involvement in responding to COVID-19 through a co-production scheme in Surabaya is based on Surabaya Mayor Regulation No. 67 of 2020. One of the provisions of the regulation is on the promotion of increased community participation in responding to COVID-19 through the establishment of *Kampung Tangguh Wani Jogo Suroboyo* at the *Rukun Warga* (RW) level. The role of residents in maintaining health protocols and serving the community within the *Kampung Tangguh* programme consists of several task forces, including the *Wani Sehat* Task Force (health), *Wani Sejahtera* Task Force (welfare), *Wani Jogo* Task Force (security and monitoring), and *Wani Ngandani* Task Force (communication and information). The Surabaya Mayor's Regulation provides legitimacy for these task forces to monitor and supervise their areas and to provide opinions, suggestions, and input regarding the implementation of the new normal order. The *Kampung Tangguh* Task Force was also required to report any cases in its area to the city government.

The coordination structure established among the agencies involved in responding to COVID-19 in Surabaya consists of several levels. These levels include the COVID-19 Task Force at the city level, which plays the central role in responding to all matters related to COVID-19 in Surabaya. The city-level task force coordinates with the sub-district administration and the *puskesmas* (service centre at the district level). Furthermore, the lowest level of the coordination structure is the task force at the RW level, which implements the *Kampung Tangguh Jogo Suroboyo* programme.

Co-production within the *Kampung Tangguh* programme is implemented at the RW level. The RW task force consists of several divisions with specific responsibilities, including the *Wani Sehat* Task Force, *Wani Sejahtera* Task Force, *Wani Jogo* Task Force, and *Wani Ngandani* Task Force. The task force is composed of members of the RW and RT communities, as well as volunteer residents. These three actors work hand in hand by applying the principles of cooperation and volunteerism in carrying out activities related to COVID-19. The *Wani Sehat* Task Force is responsible for monitoring people under surveillance (ODP), active patients, and asymptomatic individuals (OTG) with COVID-19 within their communities. In addition, the *Wani Sehat* Task Force collects data on individuals

who have had close contacts with COVID-19 patients and report this information to the *puskesmas* and *kelurahan* (urban village). Meanwhile, the *Wani Sejahtera* Task Force is responsible for ensuring the distribution of food and logistical assistance to COVID-19 patients within the community. In addition, this task force also plays a role in supporting individuals facing economic hardship and those unable to meet their basic needs due to the impact of COVID-19.

The formidable village task force consists of several divisions: the *Wani Sehat* Task Force, *Wani Sejahtera* Task Force, *Wani Jogo* Task Force, and *Wani Ngandani* Task Force. Each of them has its own responsibilities. For example, the *Wani Sehat* Task Force is responsible for issues relating to people affected by COVID, including OTG, ODP, and PDP. Meanwhile, the *Wani Sejahtera* Task Force is responsible for ensuring food availability for people affected by COVID and assisting underprivileged residents affected by the pandemic. Then the *Wani Ngandani* Task Force is responsible for providing information and public awareness regarding COVID-19. Finally, the *Wani Jogo* Task Force is responsible for protecting the local environment, implementing a single-entry system, and restricting access and activities within the community (Mojo, Interview Informant 1).

The *Wani Jogo* Task Force is responsible for protecting the community, a role that residents voluntarily undertake when implementing micro lockdowns or large-scale social restrictions (PSBB) in their respective communities. In addition, the *Wani Jogo* Task Force monitors residents who are self-isolating at home. The *Wani Ngadani* Task Force, in turn, provides residents with regular education and information related to the prevention of COVID-19 transmission. Furthermore, the *Wani Ngandani* Task Force seeks to maintain communication with various stakeholders, including sub-district administration and health centres, as well as reporting developments in local COVID-19 cases through the *lawancovid-19.surabaya.go.id* platform.

When carrying out their duties in responding to COVID-19, the COVID-19 Task Force, consisting of RW, RT, and citizen volunteers, coordinated with several stakeholders. The first stakeholder involved in the coordination process was the task force at the sub-district level, as a part of the higher-level structure responsible for handling COVID-19. All forms of information, including developments in COVID-19 cases, residents' logistical needs, and coordination for area monitoring, were conveyed by the RW task force to the urban village task force. In addition, coordination was also carried out with the nearest *puskesmas*. The coordination function of the *puskesmas* involved managing residents affected by COVID-19, includ-

ing coordinating active patients undergoing self-isolation and reporting asymptomatic individuals under surveillance. Furthermore, coordination between the RW task force and the *puskesmas* facilitated the tracing of individuals who had been in close contact with COVID-19 cases.

The task force team at the RW level consists of residents who volunteer, and we involve the RT in its activities. In carrying out the task of preventing COVID-19, we collaborate with various parties, such as the task force at the sub-district level, community health centres, *babinsa* and *bhabinkamtibmas*. Of course, coordination takes various forms, including coordination with the sub-district authorities to provide information regarding different aspects of the COVID-19 situation in our area. In addition, coordination with the *puskesmas* relates to handling individuals suspected of being exposed to COVID-19, including those categorised as ODP, PDP, and OTG. In addition, the task force assists the *puskesmas* in contact tracing. Meanwhile, we coordinate and communicate with *bhabinkamtibmas* and *babinsa* to maintain community security, especially when our village is under lockdown during periods of severe COVID transmission (Interview with Informant 7).

The RW task force, in safeguarding its area, also coordinates with *bhabinkaptibmas*, commonly referred to as community police officers at the urban village level. The coordination function carried out by the RW task force and *bhabinkaptibmas* involves addressing issues related to community security and public order. Coordination is usually intensified when the government implements PSBB, social distancing measures, or lockdowns, as these require additional efforts to maintain community security.

4.3. Planning Processes and Forms of Communication

The planning process for co-production takes place through meetings involving residents, RW, RT, and community members in the form of deliberative discussion. Planning meetings for the establishment of *Kampung Tanggub* were conducted in a closed setting while observing health protocols. If the planning process could not be completed during face-to-face meetings, discussion and decision-making continued through WhatsApp groups or other digital platforms. Task force personnel from the RT and community volunteers were jointly appointed by the RW, RT, and community members.

The formation of the *Kampung Tanggub* structure was initiated after the Surabaya City Government introduced this programme. The process of establishing a task force structure at the RW level and involving residents in

handling COVID-19 through *Kampung Tangguh* was carried out through deliberative consensus. Initially, we held limited meetings between the heads of the neighbourhood associations (RW) and the heads of the neighbourhood units (RT). During these meetings, we agreed to establish a form a *Kampung Tangguh* structure in accordance with the concept introduced by the Surabaya City Government. To fill the management structure of the *Kampung Tangguh* Task Force, we appointed RT heads and active members of the community (Interview with Informant 14).

Furthermore, for routine COVID-19 response activities, such as spraying disinfectants in the neighbourhood, the planning and decision-making process can be carried out in two ways: through direct meetings involving a limited number of residents or through digital channels, namely WhatsApp groups. When significant problems arise, such as during the COVID-19 Delta wave in mid-2021, when many residents were infected and died, responsive decision-making is carried out rapidly through digital communication between the RW head and the task force to determine the appropriate response. The *Wani Jogo* Task Force and residents quickly mobilised to implement a micro lockdown in their area. The *Wani Sehat* Task Force then began collecting data and identifying residents who had contracted COVID-19. Likewise, the *Wani Sejahtera* Task Force prepared logistics to support the food and drink needs for residents self-isolating at home.

For operational activities, planning and decision-making are usually carried out in two ways: through limited meetings or by using digital platforms, particularly WhatsApp group chats. When urgent or extraordinary situations arise that require a quick decision, such as the increase in the number of active cases and deaths experienced last year (July–August 2022), planning and decision-making are conducted via WhatsApp. Of course, WhatsApp makes the process easier because we can make decisions quickly, and all community members are informed of the outcomes of the planning and decision-making processes (Interview with Informant 3).

The process of implementing co-production by the task force at the community level in responding to COVID-19 involves communication with various parties, such as sub-districts, *linmas*, *babinsa* (security personnel), and *puskesmas*, the smallest unit of public health service. The communication network used by actors involved in responding to COVID-19 primarily relies on digital platforms, particularly WhatsApp groups. Through these digital facilities, actors coordinate with one another, discuss and resolve problems, and carry out decision-making processes. The content of these communications is, of course, very diverse. First, discussions focus

on developments of COVID-19, including OTG, ODP, and PDP cases, as well as issues related to micro lockdowns and the need for disinfectant spraying, which are subsequently reported to the urban village authorities. In this context, the RT reports to the sub-district authorities as the supervisory institution.

We have a WhatsApp group that includes various parties, namely the sub-district authorities, *babinsa*, *bhabinkamtibmas*, *linmas* (security personnel), and *puskesmas*. The WhatsApp chat group serves as a means for us to coordinate and cooperate in responding to the pandemic. For example, we communicate with the *puskesmas* regarding the management of COVID-19 patients and coordinating contact-tracing activities in our area. Meanwhile, communication is also maintained with the urban village authorities. As the administrative level above us, the urban village administration received all information concerning developments in our area. Some of the reports we submit include information on COVID-19 cases, namely OTG, ODP, and PDP cases. Communication was also carried out with the *kelurahan* regarding area closures, commonly referred to as lockdowns (Interview with Informant 2).

Second, communication between the RW task force, the sub-district authorities, and the *puskesmas* (the nearest health service unit) is required to discuss the latest developments in COVID-19 cases. When an active COVID-19 case is identified, the RW task force must immediately report it to the *puskesmas*. Based on these reports, the *puskesmas* follows up as soon as possible by recommending that patients who have contracted COVID-19 either self-isolate at home or be transferred to the isolation facility in Sukolilo, Surabaya. Communication with the *puskesmas* is also maintained to provide information and data for contact-tracing purposes involving individuals who have had contact with, or have met, suspected COVID-19 patients. Communication related to contact tracing is essential for preventing the spread of disease as quickly as possible.

Communication is also carried out with *babinsa* or *linmas*. The purpose of communication with *linmas* is usually related to efforts to maintain community security during lockdowns or large-scale social restrictions (PSBB). Such communication is usually related to the monitoring of community activities, community security, and discussions regarding area closure arrangements. Communication with the security forces is usually intensified when there is an increase in cases like last year, namely during the spread of the Delta variant (Interview with Informant 6).

Third, communication with *babinsa* and *linmas* is required to coordinate community security during the pandemic. Such communication is conducted to

determine the design of micro lockdowns when COVID-19 cases in the area are increasing. Intensive communication processes related to security typically occur during major waves of COVID-19, such as the initial wave in early 2020, the Delta wave in mid-2021, and the Omicron wave in early 2022. Communication is generally undertaken to determine the form of lockdown measures to be implemented, such as road closures and the designation of a single entry point. In addition, communication is required to identify which areas should be closed during the micro-lockdown process.

4.4 Actor Capacity Building

Generally, the parties involved in responding to COVID-19 through the co-production scheme in the *Kampung Tangguh Jogo Suroboyo* programme can be classified into two groups: professional actors or non-professional actors, namely citizens. The implementation of co-production in *Kampung Tangguh* involves lay actors, as it includes RW and RT representatives as well as members of the general public, whose involvement is particularly significant. These grassroots actors are considered lay actors because most of them do not possess professional experience or educational backgrounds in disaster management, epidemics, or epidemiology.

To address the limited understanding and improve the capacities of task force members and other grassroots actors categorised as lay people, the Surabaya City Government provided outreach and training programmes through the Health Office. The training was delivered by the Health Office at various locations, including district and sub-district offices. Some of the training provided to the RW-level task force focused on contact-tracing techniques for residents who were potentially exposed to COVID-19. Contact-tracing training was essential for task forces operating at the local level because it served as the front line in preventing the spread of the disease. The training also covered rapid response measures for assisting residents affected by COVID-19. In addition, the RW-level task force received training on the implementation of social restrictions and lockdown measures within their local communities.

As members of the task force, we received training from the Surabaya City Government on responding to COVID-19. The training was conducted at the sub-district office. During the training, we were taught how to trace contacts and track cases. We were also taught how to behave and what steps to take when dealing with COVID-19 cases. In addition, we were informed about lockdown procedures (Interview with Informant 6).

The professionals who received training were collaborative partners of the *Kampung Tangguh* Task Force at the RW level, including personnel from the Civil Service Police Unit (*Satpol PP*), *linmas*, *kelurahan* offices, *babinsa*, and *bhabinkamtibmas* (Humas Pemkot Surabaya, 2020b). The training provided to these joint team focused on case-tracking techniques. Conducted in mid-2020, during the early stages of the COVID-19 pandemic, the training represented a crucial step in preventing widespread transmission. Contact tracing is the process of identifying individuals who may be at risk because they have interacted with people exposed to the COVID-19 virus. The training covered several key areas. First, participants were taught how to collect information through a list of questions directed at patients or individuals who had interacted with them. Second, they were trained to identify and record people who had been in contact with at-risk individuals. Third, they learned how to assess patients' complaints and suspected symptoms. Fourth, the training provided information on categories of COVID-19 cases, including persons under monitoring (ODP), patients under surveillance (PDP), and symptomatic individuals (OTG). The Surabaya City Government expected that the knowledge gained through this training would be disseminated to the RW-level task force members and residents volunteering to respond to the pandemic (Humas Pemkot Surabaya, 2020b). The profile of the trained participants indicates that these professionals served as collaborative partners of the RW-level task force.

4.5. Facilitative and Collective Leadership

The co-production process in responding to COVID-19 in the *Kampung Tangguh* programme was supported by strong leadership values. The leadership characteristics that emerged were facilitative in nature. Leadership roles were not exercised by a single actor but rather by multiple actors. At the grassroots level, the key actors within the *Kampung Tangguh* structure included RW and RT leaders, as well as task force members. During the initial formation of *Kampung Tangguh*, these actors gathered ideas to motivate all members. The various actors exercising leadership sought to mobilise and strengthen the *Kampung Tangguh* community. Actors such as RW leaders and task force members democratically selected the members of the *Kampung Tangguh* Task Force through consensus-based meetings. They subsequently assumed a range of leadership roles in responding to the pandemic, from motivating community members to addressing the

spread of COVID-19 cases and providing logistical assistance to residents undergoing self-isolation.

There is no natural leader in running this *Kampung Tangguh*. Just a structural formality. From the outset, we determined the positions of the task force members through consensus-based deliberations. These appointments were based on the enthusiasm, commitment, and willingness of residents to become involved. For example, members of the *Kampung Tangguh* Task Force were selected from among RT leaders because of their demonstrated commitment, as well as from residents who were actively involved in community activities. That is what we agreed on at the meeting (Interview with Informant 2).

One of the fundamental roles of multiple actors in providing leadership within the co-production process is maintaining the commitment of residents and task force members in carrying out the main tasks and functions of *Kampung Tangguh*. The commitment that is fostered helps sustain high levels of participation, despite the fact that the participation of task force members and citizens is largely voluntary and that funding is primarily based on community self-help. In this context, leadership seeks to maintain the spirit of community cooperation amid uncertain circumstances.

Usually, we maintain the spirit of cooperation among residents in all activities. Because it is unpaid and voluntary, we (the RW leaders and task force members) continue to encourage residents to continue to work together. Indeed, when one or two people are busy and unable to participate actively, we do not force them. Our bond is based on the values of togetherness, cooperation, and shared enthusiasm to overcome the pandemic (Interview with Informant 7).

4.6. Accountability and Social Capital

The accountability mechanism in the co-production process for responding to COVID-19 through the *Kampung Tangguh* programme operates through vertical reporting. The COVID-19 Task Force at the RW level is required to report its activities in detail to the district authorities, acting as representatives of the city government. The *Kampung Tangguh* Task Force at the RW level must prepare a logbook containing a list of activities carried out over the course of a month. In addition, the logbook must include documentation describing these activities in detail. This form of reporting is also linked to the provision of a monthly allowance of 400,000

rupiahs for each task force member. Each RW is allocated only two task force positions. However, in practice, the total number of task force members often exceeded two, with the majority consisting of residents who participated on a voluntary basis.

The Surabaya City Government provides a monthly allowance of 400,000 rupiahs for two task force members, although many residents, including RT leaders, are working in the field responding to COVID-19. For every activity we carry out during the month, we are required to submit an activity report (LPJ) to the district authorities. We submit an activity report in which we provide a detailed description of the activities undertaken. We also usually provide documentation or photos of the event as proof (Interview with Informant 7).

For the operational costs of the *Kampung Tangguh* Task Force, residents relied on funds provided by non-governmental organisations, as well as donations from individuals and community groups. The lack of financial support by the city government is noteworthy, given that the implementation of the *Kampung Tangguh* programme was mandated by policies issued by the city government. In response to the lack of government funding, the *Kampung Tangguh* Task Force and the wider community demonstrated a relatively high level of voluntarism in responding to the COVID-19 outbreak. One of the values that united task force members and residents at the grassroots level is the spirit of cooperation in solving public problems independently.

For the *Kampung Tangguh* Task Force team, most operational costs are covered by donations and community self-help. There has yet to be any financial assistance from the city government. We have only received assistance in the form of disinfectants and spraying equipment provided in the district. However, the self-help resources were enough for us to survive the pandemic independently (Interview with Informant 13).

The willingness of actors, particularly local communities, to engage in co-production is inextricably linked to the social capital that had already been developed among residents in addressing public issues. Prior to the crisis, residents had become accustomed to cooperating and assisting one another in dealing with public issues. This aspect of social capital became the foundation for voluntary community engagement during the course of the pandemic, when the community's survival was under threat.

Residents are accustomed to working together on public issues. When problems arise in the neighbourhood, community members usually come together to help each other. This habit continued when COVID-19 emerged. Res-

idents spontaneously took the initiative to become involved and established a system to prevent COVID-19 from having an even greater impact (Interview with Informant 14).

The established social capital network was of an informal nature, taking the form of community groups and neighbourhood associations. This collaborative approach fostered a sense of community and mutual trust among residents. These factors served as the primary binding force that encouraged residents to voluntarily assume their roles in the event of a policy initiative aimed at protecting the community.

The foundations for cooperation were indeed built informally at first. We were already accustomed to this when COVID-19 emerged, and when government policy required the formation of a prevention team, we voluntarily became involved. This habit of working together ultimately led us to trust each other and understand each other's characteristics, making it easier to share responsibilities when responding to public issues such as the COVID-19 crisis (Interview with Informant 13).

5. Discussion

Urban village communities have played a pivotal role during the pandemic through the implementation of co-production schemes involving a range of actors, including citizens, local communities, COVID-19 task forces, health workers, and government entities. In this context, citizens or local communities are not merely the targets of policy interventions but are actively engaged in policy design, decision-making, implementation and accountability processes from the outset. As illustrated in Figure 1, these findings suggest that citizens have been at the forefront of efforts to prevent the spread of the virus and mitigate its impact.

The establishment of a clear and legitimate institutional design is considered to be one of the pillars supporting pandemic resilience management at the local level. The local government established a set of regulations, referred to as mayoral regulations, which served as a reference framework for all relevant actors, particularly local communities, to encourage their involvement in pandemic prevention efforts. Following the outbreak of the crisis, the mayor established a response structure at the village level to address the challenges posed by the virus. This structure comprised various elements, including the village government, health workers, security personnel, local communities, and the task force team. The composition of task force teams is of particular interest, given that they included ordinary citizens. These cit-

izens formed part of the structure organised into several divisions, namely *Wani Sehat*, *Wani Sejahtera*, *Wani Jogo*, and *Wani Ngandani*.

The ability of communities to demonstrate resilience during the pandemic caused by the novel virus known as SARS-CoV-2 is significantly influenced by the capacity of public and private institutions to exhibit resilience (Gherghina, Volintiru, & Sigurjonsson, 2023; Kuhlmann et al., 2024). Institutional resilience is measured and analysed through three dimensions: preparedness, agility, and robustness. Although villages in Surabaya differed in the extent to which they prioritised community involvement in pandemic response efforts, further research is needed to ascertain the full extent of these differences. As elucidated in a different case study, a state-led model of co-production involving government agencies, communities, and volunteer organisations fostered long-term collaboration in responding to the spread of the novel severe acute respiratory syndrome (Miao, Schwarz, & Schwarz, 2021b). Similarly, another study highlighted the importance of informal and adaptive institutions, including dialogue, community empowerment, and participatory regulation (Wang, Zhang, & Ran, 2025).

The planning and decision-making processes involved in collaborative efforts to enhance pandemic resilience are characterised by a participatory and adaptive approach. Planning was conducted through deliberative meetings involving a range of actors, including government agencies and citizens. Despite differences in authority among participants, the deliberative process was conducted in an inclusive manner, ensuring that all participants had the opportunity to express their views. During periods of crises requiring prompt decision-making, decision-making was facilitated through WhatsApp groups. The use of digital tools for decision-making and communication reflected the need to limit face-to-face interactions while responding swiftly to the spread of the virus. In this context, the usual bureaucratic constraints that would typically impede the process were to a certain extent mitigated, thereby enabling the decision-making to proceed amidst the prevailing crisis.

In crisis situations, effective decision-making requires the involvement of multiple stakeholders across different phases. Such engagement is facilitated through dialogue, the mobilisation of human resources, and the establishment of the rule of law grounded in participatory change and adapted to the specific characteristics of the crisis (Wang, Zhang, & Ran, 2025). The decision-making process was guided by the existing institutional framework, with adjustments made through iterations and the consideration of pertinent evidence (Marten et al., 2021). Knowledge-to-action

models have been shown to support dialogue, collaboration, and adaptation in decision-making during periods of crisis (Owek et al., 2024).

The management of the COVID-19 pandemic at the urban village level was supported by ongoing communication among multiple actors, including residents, village authorities, security personnel, and health workers. Communication and coordination among these actors were facilitated through digital platforms such as WhatsApp and video-streaming applications. Digital communication was used to manage various aspects of the pandemic, including the coordination of micro lockdowns, case reporting, contact tracing, and logistics coordination. Rapid and effective digital communication constituted a key element in responding to emergency situations.

The effectiveness of the pandemic response depended on communication strategies. Communication processes needed to reflect the principles of co-communication, emphasising dialogue and engagement in accordance with the terms established by the parties involved (Khan et al., 2022). The mitigation of the impacts of the novel coronavirus was primarily attributable to the effectiveness of communication and coordination among relevant stakeholders (Berbés-Blázquez et al., 2022; Shareck et al., 2024). The effectiveness of these efforts also relied on the establishment of two-way communication channels and the ability to respond to evolving pandemic conditions in real time. In the context of a crisis requiring resilience, such as a pandemic, effective risk communication is paramount. Such communication should be grounded in transparency and trust while also addressing the psychological well-being of the public (Porat et al., 2020; Shareck et al., 2024).

Within the domain of co-production, two distinct categories of key actors can be identified: namely, lay actors and professional actors. Lay actors constituting this group are community volunteers who possess no medical experience. These volunteers constitute the lowest echelon of the task force established to combat the effects of the novel coronavirus. This voluntary team is at the forefront of the efforts to tackle and prevent the spread of the novel coronavirus at the sub-village level. A salient challenge confronting volunteers is their limited capacity, stemming from their lack of a medical background. Concurrently, professional actors, recruited from community health centres, the civil service, and the police and security forces, were entrusted with training the volunteers. The overarching objective of the programme was to enhance the volunteers' capabilities. The training programme encompassed a range of modules, including contact tracing, health protocols, and micro-level lockdown mechanisms. It

can thus be concluded that co-production is successful when all participants, particularly volunteers, possess adequate capacity.

A further study has demonstrated that the empowerment of volunteers with the objective of enhancing their capabilities remains limited. The enhancement of volunteers' capacities is principally situational, contingent on their experience in confronting multifaceted situations during crisis management (Irandoost et al., 2022). This paper sets out the findings of a study on the impact of the pandemic on volunteer engagement, particularly in the context of the government's response to the virus. The study, which was conducted in response to the global health crisis, found that volunteers were able to play a key role in the resilience process against the virus. However, this empowerment was largely realised within the framework of stated co-production. Another study has revealed that a structured training programme was implemented to equip volunteers with the scientific knowledge and skills required for the distribution of vaccines. This programme also included training in effective risk communication, countering misinformation, and communicating with citizens (Kaufman et al., 2022).

Moreover, the leadership style employed in the co-production of urban villages is characterised by several distinct features. These include a collective nature, facilitative approaches, and a foundation in social commitment. The absence of a designated leader within this collaborative endeavour indicates a non-hierarchical leadership structure, as the notion of a "strong leader" is not applicable in this context. Community leaders, hamlet heads, and village heads assume a more facilitative role. Leadership in this context entails maintaining volunteer motivation, facilitating voluntary participation, and enhancing the value of mutual cooperation. It can be argued that the nature of co-production in this context is relational rather than command-and-control oriented. The presence of facilitative leadership characteristics has been shown to have a positive impact on the strengthening of resilience to disease crises (Harmawan et al., 2022). In times of crisis, effective leadership must include the ability to coordinate across various actors, share power, and navigate complex structures during a pandemic (Connolly et al., 2023). Furthermore, leaders are required to integrate health policy implementation, institutional actors, and society in order to respond more effectively to the challenges posed by the novel coronavirus (Nicola et al., 2020).

While residents are the primary agents of change and are community-based, the mechanisms of accountability in the context of co-production for pandemic resilience are vertical and formal. In this particular

Figure 1: *Co-production-based community resilience model in response to the COVID-19 pandemic*



Source: Authors.

context, responsibility for evaluating the performance of co-production remains firmly vested in the state. Accountability reports encompass a variety of documentation, including monthly reports, activity logbooks, and records of activities undertaken. However, in practice, transparent accountability is not supported by sufficient budgetary allocations from the government, particularly the city government. It has been established that the municipal government has mandated the establishment of task forces at the village and sub-village levels; however, financial support remains severely restricted. A phenomenon of a responsibility–resource gap has been identified, whereby responsibility is delegated to the com-

munity without the provision of adequate resources. In the absence of substantial state support, the majority of co-production operations at the sub-village level are funded by the community through residents' contributions, individual donations, informal assistance from local organisations, and non-material forms of mutual assistance, such as labour, time, and logistics. The sustainability of co-production can be attributed to the substantial contribution of social capital. Social capital has been shown to facilitate the formation of bonds between individuals, manifested in the form of collective compliance, trust between actors, and the enforcement of health norms during periods of disease outbreak (Fraser, Page-Tan, & Aldrich, 2022). The social capital thus generated increases the willingness of individuals to comply with public health policies. The motivation for compliance is derived from internal factors and informal social pressures in contexts characterised by elevated risks and threats (Choi & Kim, 2024). Furthermore, the utilisation of social capital has been shown to mitigate public scepticism regarding the use of vaccines to prevent the spread and effects of the disease (Habibov & Auchynnikava, 2025).

6. Conclusion

This study demonstrates that co-production constitutes a critical governance mechanism for enhancing community resilience during pandemic crises, particularly under conditions of limited state capacity. The findings, drawn from the case of urban village communities in Surabaya, demonstrate that effective pandemic responses are characterised by the integration of inclusive institutional design, participatory planning, adaptive communication, and collective leadership. The extant empirical evidence demonstrates that citizens are not merely passive recipients of public services, but active co-producers who contribute to decision-making, service delivery, and accountability processes. Co-production, defined as the joint creation of a product or service by multiple actors, has been identified as a significant mechanism for generating public value. Through sustained interaction between local governments, community actors, and professionals, co-production has been shown to strengthen trust, social cohesion, and collective compliance. These elements are considered to be essential for effective management of uncertainty and mitigation of crisis impacts at the local level.

Moreover, this study makes a theoretical contribution by extending the existing literature on co-production to the domain of crisis governance. It offers a contextualised framework that explains how community-based

co-production operates across institutional, managerial, and relational dimensions during pandemics. The practical implications of these findings emphasise the need to invest in volunteer capacity-building, ensure adequate resource allocation, and nurture social capital in order to sustain long-term resilience beyond emergency periods. While the case demonstrates the strengths of state-led co-production, it also reveals structural challenges, particularly the imbalance between delegated responsibilities and limited financial support. Future research should undertake a comparative assessment of co-production performance across a range of crisis contexts and governance scales. In addition, the long-term implications of co-production for democratic legitimacy and public service transformation in times of systemic disruption warrant further investigation.

6.1. Theoretical Implications

Theoretically, this study contributes to the literature on the application of co-production in responding to crises such as the COVID-19 global pandemic, particularly at the local government level. Moreover, the findings demonstrate citizen volunteers play a dominant role in the delivery of services aimed at preventing the spread of the virus. Previous studies on co-production have tended to focus on broader discussions of the importance of citizen involvement in responding to the COVID-19 pandemic (Marten et al., 2021). The findings of research focusing on the literacy levels of citizens are likely to have a significant impact on the success of co-production in responding to the challenges posed by the global pandemic (Qin et al., 2024). In addition, research has indicated that the use of digital tools in co-production can enhance the effectiveness of pandemic management (Pilemalm & Alkusaibati, 2024). This study provides a foundation for further research on the application of co-production in response to turbulent situations such as pandemics. Future research could examine citizen involvement in co-production processes in response to crises at the national level. It could also assess the performance of co-production in addressing crises arising from disease outbreaks, environmental change, or climate change. Further empirical research is needed to strengthen the proposition that increased citizen engagement can contribute to improved service performance, particularly in circumstances characterised by uncertainty. Furthermore, future research may help to develop the concept of co-production as a fundamental mechanism of crisis governance.

6.2. Practical Implications

The present study has practical implications, demonstrating that volunteer involvement at the micro level is a critical component of frontline efforts to contain the spread of the pandemic. The case study outlined above highlights the importance of empowering volunteers through comprehensive training, allocating sufficient financial resources, and providing them with sufficient autonomy to implement policies at the grassroots level. Moreover, the maintenance and enhancement of social capital represent pivotal elements at the micro level in the implementation of co-production aimed at strengthening community resilience to the impacts of a virus outbreak. The maintenance of social capital cannot be achieved through a single intervention or short-term effort; rather, it is a continuous process that requires nurturing under both stable and turbulent conditions. The resilient village model has the potential to be replicated in a variety of other crisis contexts, including natural disasters, environmental disasters, climate change, and socio-economic crises, provided that the local context is taken into account and adequate government support is available.

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CO-PRODUCTION IN RESPONSE TO COVID-19: A CASE STUDY OF URBAN VILLAGE COMMUNITY RESILIENCE DURING THE PANDEMIC IN INDONESIA

Summary

This article examines the implementation of co-production in strengthening urban village community resilience during the COVID-19 pandemic in Surabaya, Indonesia. Departing from the argument that limited state capacity constrained government responses to complex pandemic pressures, the study positions co-production as a critical governance mechanism through which local communities, public authorities, health workers, security actors, and volunteers jointly contributed to crisis management. Using a qualitative case study approach, the research draws on twenty semi-structured interviews with urban village actors, COVID-19 Task Force members, neighbourhood leaders, and residents, complemented by regulatory documents, government reports, field documentation, media sources, and relevant literature. The study focuses on the Kampung Tangguh Jogo Suroboyo programme as a community-based resilience initiative institutionalised through mayoral regulations and implemented at the neighbourhood level. The findings show that urban village communities were not merely passive recipients of government policy, but active co-producers involved in institutional design, participatory planning, decision-making, communication, capacity-building, implementation, and accountability. The co-production process was supported by several key elements, including legal legitimacy, flexible

institutional arrangements, deliberative community meetings, WhatsApp-based coordination, volunteer training, collective leadership, social capital, and locally mobilised resources. The article demonstrates that co-production generated public value by enhancing trust, collective compliance, social solidarity, and adaptive problem-solving during the pandemic. However, it also identifies structural challenges, particularly the gap between delegated community responsibilities and limited financial support from the government. While the local government provided regulatory legitimacy and some operational support, much of the implementation depended on community self-help, voluntary labour, and informal social networks. Theoretically, the study contributes to the co-production and crisis governance literature by offering a contextualised framework for understanding how community-based co-production operates under conditions of uncertainty and constrained state capacity. Practically, it highlights the importance of volunteer empowerment, digital coordination, social capital, and adequate resource allocation for sustaining community resilience beyond emergency periods.

Keywords: co-production, COVID-19, urban village community, crisis resilience

KOPRODUKCIJA KAO ODGOVOR NA COVID-19: STUDIJA SLUČAJA OTPORNOSTI ZAJEDNICE URBANIH NASELJA TIJEKOM PANDEMIJE U INDONEZIJI

Sažetak

Ovaj rad istražuje provedbu koprodukcije u jačanju otpornosti zajednica urbanih naselja tijekom pandemije bolesti COVID-19 u Surabaji, Indonezija. Polazeći od tvrdnje da su ograničeni kapaciteti države otežali odgovor vlasti na složene izazove pandemije, istraživanje promatra koprodukciju kao ključni mehanizam upravljanja putem kojeg su lokalne zajednice, javne vlasti, zdravstveni djelatnici, sigurnosni akteri i volonteri zajednički doprinosili upravljanju krizom. Koristeći kvalitativni pristup studije slučaja, istraživanje se temelji na 20 polustrukturiranih intervjua provedenih s akterima urbanih naselja, članovima stožera zaduženih za praćenje pandemije bolesti COVID-19, voditeljima gradskih četvrti te stanovnicima, uz analizu propisa, vladinih izvješća, terenske dokumentacije, medijskih izvora i relevantne literature. Istraživanje je usmjereno na program Kampung Tangguh Jogo Suroboyo kao inicijativu usmjerenu na jačanje otpornosti lokalne zajednice, institucionaliziranu aktima gradonačelnika

i provedenu na razini gradskih četvrti. Rezultati pokazuju da zajednice urbanih naselja nisu bile samo pasivni provoditelji vladinih politika, već aktivni sudionici uključeni u institucionalno oblikovanje, participativno planiranje, donošenje odluka, komunikaciju, jačanje kapaciteta, provedbu i odgovornost za izvršenje. Proces koprodukcije temeljio se na više ključnih elemenata, uključujući pravnu utemeljenost poduzetih aktivnosti, fleksibilne institucionalne oblike, deliberativne sastanke zajednice, koordinaciju putem aplikacije WhatsApp, edukaciju volontera, kolektivno vodstvo, društveni kapital i lokalne resurse. Rad pokazuje da je koprodukcija stvarala javnu vrijednost jačanjem povjerenja, kolektivnim pridržavanjem mjera, društvenom solidarnošću i adaptivnim rješavanjem problema tijekom pandemije. Međutim, rad identificira i strukturne izazove, osobito jaz između odgovornosti prenesenih na zajednicu i ograničene financijske potpore države. Iako je lokalna vlast osigurala regulatornu legitimnost i određenu operativnu potporu, velik dio provedbe oslanjao se na samopomoć zajednice, dobrovoljni rad i neformalne društvene mreže. Na teorijskoj razini, istraživanje doprinosi literaturi o koprodukciji i upravljanju krizama nudeći kontekstualizirani okvir za razumijevanje načina na koji koprodukcija usmjerena na lokalnu zajednicu funkcionira u uvjetima neizvjesnosti i ograničenih državnih kapaciteta. Na praktičnoj razini, rad naglašava važnost osnaživanja volontera, digitalne koordinacije, društvenog kapitala i odgovarajuće raspodjele resursa za jačanje otpornosti zajednice i nakon završetka izvanrednih situacija. Ključne riječi: koprodukcija, COVID-19, zajednica urbanih naselja, otpornost na krize