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A Study on Community Public Safety Collaborative Governance Regime in the Background of COVID-19: Empirical Analysis Based on China and South Korea

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Abstract: Community public safety is facing great challenges in the context of the COVID-19 pandemic. While helping communities identify crises and prevent risks, and improving community public safety governance, collaborative governance is changing the trends of a complex, uncertain, and ever-changing environment, and helping to drive communities toward higher levels of development and improved community sustainability. The purpose of this paper was to design a model of collaborative governance regime (CGR) that better fits the particular context of COVID-19 to enhance community safety and achieve sustainability of collaborative governance. This paper investigated and empirically analyzed the COVID-19 response in Chinese and Korean communities. It is found that collaborative dynamics can positively contribute to collaborative performance; collaborative dynamics can positively contribute to collaborative actions; collaborative actions can positively contribute to collaborative performance; collaborative actions play a partially mediating role between collaborative dynamics and collaborative performance; and there is heterogeneity in collaborative governance regimes in different system contexts. The paper suggests several insights: collaborative governance can deal with uncertainty and unpredictable turbulence; enhancing the capacity for joint action is more conducive to collaborative performance; and the role of government in collaborative governance is valued. Our study provides data support for validating the operating principles and internal logical relationships of collaborative governance and provides an empirical basis for responding to large-scale public crises in different contexts.

Keywords: community collaborative governance; COVID-19 response; collaborative dynamics; collaborative actions; collaborative performance



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1. Introduction

With the advent of the risk society era, the community public safety situation is becoming increasingly complex and volatile. In response to the challenges posed by increasingly complex social issues, government funding shortages, and lack of capacity, the last three decades have seen the practice of cross-sectoral interaction between governments and businesses, non-governmental organizations, and citizens around the world. This cross-sectoral interaction can lead to the better and more efficient delivery of public services, conservation of natural resources, etc. Theoretically, the concept of “collaborative governance” has been used to refer to such cross-sectoral collaboration. In the context of a risk society where risks are accumulating and disasters are frequent, urban communities are becoming increasingly diverse in terms of the nature, region, and scale of their participation in public safety responses. Many collaborators and conflict resolvers are involved in collaborative governance [1]. In the COVID-19 response, as the basic unit of residents’ lives, the community is the first barrier to the outbreak response besides hospitals and the first battlefield for ordinary citizens to fight the COVID-19 outbreak. How to cope with the epidemic,

maintain community safety, and improve community sustainability through collaborative governance have become important topics of research for scholars in various countries.

With the widespread and rapid spread of COVID-19 worldwide, governments are facing a great test and have adopted different response programs and measures. Some European countries have chosen a herd immunization model to deal with the COVID-19 pandemic [2]. The Chinese government has implemented a strong national control policy through strict physical quarantine and social lockdowns to halt the development of the epidemic [3,4]. With government leadership and support, community-level organizational interaction, mutual assistance of residents, and cooperation of external private and non-profit organizations, multiple social forces have been involved in epidemic control with good results [5,6]. Meanwhile, the Korean government has deployed a precise and unique defense model to control the spread of COVID-19, maintaining the economic development and social life of the country while effectively controlling the epidemic [7,8]. It has been suggested that the effective outcome of outbreak control in Korea was due to the rapid and systematic government response to COVID-19 and the active cooperation of civil society with government policies [9,10]. Although Korea and China adopted different epidemic policies and measures, both countries received active cooperation from multiple social forces in the epidemic prevention and control process, and both achieved effective control of COVID-19 while maintaining the country's economic development and healthy social life, which are two typical templates of successful implementation of collaborative governance.

Emerson et al. (2012) proposed an integrative framework for collaborative governance (IFCG), which in the particular context of COVID-19 enables cross-organizational, cross-sectoral, shared decision-making, management, implementation, and other activities that bring together social forces at the community level [11]. Inspired by the IFCG model and taking into account the particular context of COVID-19, this paper subdivided and modified the IFCG model by introducing collaborative dynamics, collaborative actions, and collaborative performance and exploring their interrelationships. This modification makes the IFCG model will be more suitable to the research context of COVID-19 and applicable to the study of collaborative governance in public crisis response.

Case studies are suitable for situations where the researcher has little control over the subject or where the focus of attention is on current real-life practical issues [12]. The explosion of COVID-19, a game changer for public administration and leadership [13], not only poses a great challenge to public safety in current communities but is also a great opportunity to analyze how countries are using collaborative governance to counter pandemics is an excellent case study. Therefore, this paper researched and obtained data on COVID-19 responses in Korean and Chinese communities, and conducted a regression analysis of the operational patterns and logical relationships of the elements within the collaborative governance regime. It was found that collaborative dynamics such as trust, understanding, responsive organizational structure, leadership, knowledge, and resources can facilitate the implementation of collaborative actions and improve collaborative performance during the outbreak control process. Collaborative actions play a partial mediating role in collaborative dynamics and collaborative performance, i.e., at the beginning of an outbreak, social capital such as trust and understanding already existing in the community beforehand will help the emergency response and directly participate in collaborative governance. However, in the face of major public emergencies, it is still necessary to draw on the compliance and supportive actions of collaborative participants to play an effective role. The study also found that there is heterogeneity in collaborative governance regimes in different system contexts, and the shared motivation and the capacity for joint action in collaborative governance regimes in China and South Korea are different. This difference may be related to the different political, cultural, legal, and institutional system contexts of the two countries.

The contribution of our study is threefold. First, scholars have emphasized the important role of collaborative governance in community governance, but the studies have focused on the participation of diverse subjects or have only used collaborative governance

as the theoretical background of the study [14,15]. In this paper, we dialectically analyzed the logical relationship between the dynamics, actions, and outcomes of collaborative governance and clarified the operating fundamentals of collaborative governance. Second, we proposed a research model of a collaborative governance regime in the context of large public crises. The broader context of COVID-19 gives us a good opportunity to test the applicability of this model. The model provides empirical refinement and causal arguments to established research models, which improves the existing collaborative governance framework and contributes to the derivation of collaborative governance regimes. Third, the existing literature on the empirical analysis of collaborative governance theory is dominated by case studies [16,17], and fewer data are used to quantitatively analyze the relationships of the elements within collaborative governance. This study used research data and statistical analysis to conduct quantitative research, reasoning about logical relationships and validating causal relationships. The mediating effect model is used to explore the transmission mechanism between different elements. It provides empirical evidence for the operational principles and relevant logical relationships of collaborative governance and enriches the research methodology of collaborative governance theory.

The rest of the article is structured as follows: Section 2 reviews the literature on collaborative governance theory, Section 3 contains the research model and research hypotheses, and Section 4 contains the empirical analysis to test the model and hypotheses. Section 5 summarizes the research findings and presents the limitations of the study and directions for subsequent research.

2. Literature Review

Collaborative governance originated from the study of intergovernmental cooperation in the 1960s [18] and has been applied by numerous public administration practitioners to the process of government governance as a new way to develop government business [13,19,20]. Collaborative governance theory evolved from governance theory and is widely used in public administration research, often used interchangeably with governance, networks, public–private partnerships, and cross-boundary collaboration [21,22]. Rhodes argued that governance is a self-organizing network characterized by interdependence, resource exchange, rules of the game, and state autonomy, and that public-sector and private cooperation are important features that distinguish governance from the government [23]. Sørensen et al. provided a comprehensive analysis of network governance as a relatively stable horizontal link that achieves public purposes through consultation and negotiation within a relatively institutionalized framework. It also advocates that the effectiveness and democracy of network governance are improved through meta-governance by politicians and public managers [24]. Provan and Kenis further investigated three basic forms of network governance, arguing that trust, goal consensus, etc. are closely related to governance effectiveness and emphasizing the role of management in governance [25]. Collaborative governance shares many similarities with network governance, which promises to better coordinate public–private partnerships and engage multiple levels of government and nongovernmental stakeholders [19]. Emerson et al. considered collaborative governance as the process and structure of public policy decision-making and management that enables people to participate constructively across the boundaries of public institutions, individual levels of government, and/or public, private, and civic boundaries of the sphere to constructively engage in order to achieve public goals that cannot be achieved in other ways [11]. However, to today, there is controversy regarding the role of government in the collaborative governance process. One view emphasizes the autonomy of individuals and organizations in collaborative governance, equality, and the importance of rules [26,27]. Culpepper argued that the government does not have a monopoly on the definition of the problem and the choice of implementation methods in the collaborative governance process [28]. Hartley et al. emphasized that collaborative governance requires the participation of multiple actors in the first, second, and third sectors. Another view in the field of public management focuses on the dominance of the government among the multiple

governance actors [29]. Ansell and Gash emphasized that collaborative governance is initiated by government agencies and the participants include nongovernmental actors with a collaborative focus on public policy or public management [1]. Donahue and Zeckhauser argued that the government has the final say in the collaborative governance process, but that other participants should also have a degree of discretion, rather than just following the government's orders [30]. This paper adopted the second view, i.e., collaborative governance is generally initiated and led by the government, especially in large-scale public crises such as COVID-19, where the government has the absolute resource advantage in crisis response.

Since the COVID-19 outbreak, many scholars have discussed the important role of collaborative governance theory in crisis response. Huang described the collaborative governance conducted in Taiwan in response to COVID-19 and argued that the implementation of good measures such as lockdown, tracking, and quarantine, coupled with a high level of public compliance enabled Taiwan to achieve a better epidemic prevention outcome [31]. Liu et al. developed a theoretical framework to understand the horizontal and hierarchical dynamics of community collaborative governance during urban crisis response in China by incorporating collaborative governance theory and found that community social capital is an important component of community collaborative governance and a key to successful response to crises such as COVID-19 [32]. In order to alleviate the inefficiency of the global public health emergency management system (PES) in the context of COVID-19, Huang et al. (2022) discussed and designed the incentive mechanism of PES collaborative governance by establishing three game theory decision-making models, so as to realize the realization of the entire public ecological system. The coordinated operation of the system [33]. The abovementioned studies have greatly enriched the practice of collaborative governance theory in the context of COVID-19, but most of them have analyzed one element of collaborative governance, lacking a study of collaborative governance from a holistic perspective.

Among the studies on the theoretical framework of collaborative governance, Ansell and Gash were the first to propose the collaborative governance framework (SFIC) by conducting a “successive approximation” analysis of 137 cases from different countries and different policy areas [1]. They identified the conditions under which collaborative governance is expected to succeed in achieving its goals and the conditions under which it is likely to fail. The starting conditions, facilitative leadership, institutional design, and collaborative processes are the focus of the model. The model has also become a benchmark model for studying collaborative governance [34,35]. However, the SFIC model places collaborative governance in a “closed” environment and analyzes collaborative governance between government and society in a narrow sense, which is a limitation of the theoretical framework for analyzing collaborative governance within government.

Emerson et al. extended Ansell and Gash's framework to include the elements of “context and impact” to propose the Integrated Framework for Collaborative Governance (IFCG) [11], a theoretical framework for good governance in which various participatory entities work together so that IFCG contains several elements: system context, drivers, collaborative dynamics (principled participation, shared motivation, capacity for joint action), collaborative actions, impact, and adaptation. The elements are interrelated, and the system context determines the operation of the collaborative governance regime, which in turn influences the system context and thus makes the IFCG sustainable. Emerson et al. (2012) emphasized that the integrated framework of collaborative governance can be analyzed as a whole, or certain elements of the integrated framework of collaborative governance can be selected for analysis [11]. The framework is gradually gaining academic recognition, and many scholars have used it to discover new horizons in governance. Lee used this framework to analyze data governance in the UK and discussed the implications for the establishment of administrative data governance in Korea [7]. Lahat et al. constructed a triple perspective on the implementation of collaborative governance, arguing that there are three important conditions for collaborative governance to be effective in implementa-

tion: value, decision, and environment [36]. In this paper, we selected “system context”, “collaborative dynamics”, “collaborative actions”, and “influence and adaptation” in the IFCG model. The logic model is designed to carry out the study of collaborative governance in the context of COVID-19.

3. Research Model and Hypothesis

3.1. Research Model

The IFCG model emphasizes the drivers as a prerequisite for the beginning of collaborative governance, which helps to initiate and define the direction of collaborative governance. This paper argued that with the outbreak of COVID-19, human life safety and health face major threats and countries and regions with different political, legal, and environmental contexts face the same threats and challenges [37]. The characteristics of a human destiny community are highlighted, where different countries and regions share the same mission and establish common goals and values. Different governments and interest groups are interdependent and have related interests. In the face of the common task of fighting the epidemic globally, the research framework of this paper tacitly assumed that the participants of collaborative governance share common goals and values and have reached a collaborative consensus. Thus, the drivers are already in play and the IFCG model has been activated.

This paper selected “system context”, “collaborative dynamics”, “collaborative actions”, and “impact and adaptation” in the IFCG model to design a logical model to carry out research on collaborative governance in the context of COVID-19. The new model selected “system context” as the outer layer of the model, and different system environments will produce different models of collaborative governance regimes. The kernel of the new model is the collaborative governance regime (CGR), in which “collaborative dynamics” was selected as the original driving force of CGR, “collaborative actions” is the intermediate output of CGR, and “impact, adaptation” is the final result of the CGR operation. In this paper, we focused on the correlation between “collaborative dynamics”, collaborative actions”, and “collaborative performance (impact and adaptation)”, and the model is shown in Figure 1.

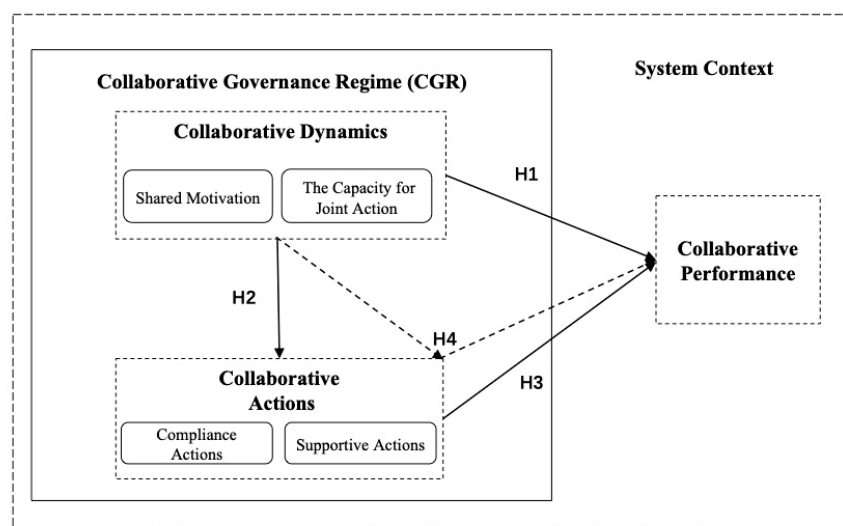


Figure 1. Research model of collaborative governance regime in the context of COVID-19.

- (1) The first part of the model is represented by the outermost dashed line, which represents the surrounding system context. The system context refers to the multi-level environmental context that influences CGR, including political, legal, cultural, and environmental influences. This system context creates opportunities and constraints and continues to influence collaborative governance regimes. The relationship between

- the system context and CGR is inherently reciprocal: the system context influences CGR and vice versa. The system context determines the mode of operation of CGRs, and different system contexts will produce different CGRs. Therefore, the importance of the system context cannot be ignored when studying collaborative governance regimes. Different political, legal, cultural, and environmental contexts should be combined to choose the appropriate collaborative governance model. At the same time, over time, collaborative governance can change the complex, uncertain, and ever-changing system context. As CGR adapts to the new system context it produces, a new CGR model is initiated, and collaborative governance becomes more sustainable.
- (2) The second part of the model is the collaborative governance regime (CGR), which is represented by a solid line. The concept of CGR is unique in this framework, and it represents a holistic governance process with collaboration as the main activity. The “regime” is a set of implicit and explicit principles, rules, norms, and decision-making procedures around which the expectations of actors in a given domain revolve [38]. Emerson et al. (2012) interpreted “regime” as a particular model or system of public decision-making [11]. Collaborative Governance Regimes (CGR) is a cross-organizational system oriented toward public policy or public services, involving a series of autonomous organizations representing different interests and/or jurisdictions [39]. This paper argues that Collaborative Governance Regimes (CGR) is similar to goal-oriented inter-organizational networks [40], a relatively stable and institutionalized model or system in which multiple actors from the public and private institutions participate together in public decision-making to achieve public purposes through cross-boundary collaboration. CGR contains collaborative dynamics and collaborative actions, which are the main analytical tools in this paper. The first part of the CGR is Collaborative Dynamics (CD). Collaborative Dynamics are processes that stimulate or induce the convening of participants, which often manifest as a continuous cycle or iterative interaction of capital, information, knowledge, resources, etc. [1,11,41]. When the CGR starts running, the CD will provide it with energy and power. CD consists of two components: shared motivation and capacity for joint action.

Shared motivation indicates the trust of participants in collaborative governance. Trust makes it easier to communicate across professional and organizational boundaries [42]. Mutual trust is an important factor in determining the success of collaborative governance, weakening regulatory activities, and ultimately reducing transaction costs. Trust will contribute to the achievement of good outcomes and it can play an important role not only in governance systems but also in hierarchies [43]. Shared motivation highlights the interpersonal and relational elements of collaborative dynamics, sometimes referred to as social capital [44,45]. Putnam argued that trust generates social capital and facilitates the creation of collaborative networks in communities [46]. In addition, Agranoff emphasized the importance of mutual trust in collaborative governance, arguing that trust among participants in governance tends to consolidate collaborative structures [47].

The capacity for joint action is a collection of cross-functional elements' that are the driving force for effective action and also facilitate the achievement of organizational strategy and achieve organizational performance [11]. The capacity for joint action is critical to collective governance and consists of a combination of four elements: “procedures and institutional arrangements, leadership, knowledge, and resources” [11]. The internal power structures of collaborative governance institutions tend to be more fluid, multilayered, and complex than those of traditional bureaucracies [48]. The second element of capacity for joint action is leadership. Collaborative governance requires and fosters multiple leadership opportunities and roles [18]. These include leadership roles as initiators, conveners, facilitators, organizational or constituency representatives, scientific translators, technical experts, and public advocates. Certain leadership roles are important at the outset, others are more critical at the time of deliberation or conflict, and still others are more important when collaborative actions begin to be implemented. Knowledge and resources were also

identified as important factors influencing the capacity for joint action in the framework. Without adequate knowledge and resources, collaborative governance regimes, as well as a single management system, will be reactive in their actions. In fact, knowledge and resources can be pooled, combined, and shared in the governance process, thus making the governance regime more flexible and conducive to solving complex problems than the traditional single-government management.

Another part of CGR is Collaborative Action (CA), which is the intermediate output of CGR. Collaborative Action (CA) is a type of collective action identified by partners involved in collaborative governance based on their theory of action. Collaborative actions include obtaining permits, educating constituents or the public, developing policy measures (new laws or regulations), integrating external resources, deploying personnel, siting and permitting facilities, building or cleaning up, implementing new management practices, monitoring implementation, and enforcing compliance [11,49]. Once the collaborative dynamics provide much of the energy and momentum for CGR, collaborative actions begin to emerge, with multiple forces such as government, businesses, NGOs, and citizens joining together and taking action. Emerson et al. divided collaborative actions into ten components: gaining recognition, educating constituents or the public, developing policy measures (new laws or regulations), marshaling external resources, deploying personnel, siting and permitting facilities, building or cleanup, implementing new management practices, and monitoring implementation and enforcing enforcement, etc. The original model is less descriptive of collaborative action, which is expanded and deepened in this paper. In the context of community governance, especially in the face of a major public event such as COVID-19, a new model of collaborative governance will emerge. This paper reclassifies collaborative actions into compliance and supportive actions.

Compliance actions mainly refers to the public actively and voluntarily adopting behaviors that are consistent with the requirements of the system [50], and the research on compliance actions is mostly focused on corporate environmental policy compliance and tax compliance actions, and the research on compliance actions in the field of public management mainly refers to compliance with policies. Citizen policy compliance refers to citizens as a target group following and obeying public policy-related regulations, adjusting and regulating their attitudes and behaviors, complying with policy regulations, and avoiding behaviors that are inconsistent with them [51]. This paper argues that the compliance actions in the collaborative governance regime include both cross-regional policy formulation and implementation behavior initiated by the public sector, mainly the government, as well as the compliance actions of various social forces such as enterprises, NGOs, charitable groups, volunteer groups, and residents to the policy. Guiding citizens, enterprises, and non-profit organizations to act in the way desired by policy goals and motivating citizens to make policy compliance actions are important for improving the effectiveness of government governance [52].

Supportive actions are individual organizational members helping each other to solve problems in the task and create a sense of responsibility [53]. Supportive action is an important aspect in multi-organizational collaboration. Similar to the concept of “helping actions” [54]. As a dynamic and open system, collaborative governance regimes link participants to each other through a common hierarchical network of goals, and each participant provides help and support to each other in developing plans, adjusting tasks and resources, and so on. In this paper, we argue that the supporting actions in the collaborative governance regime are initiated by government agencies, enterprises, NGOs, charitable groups, volunteer groups, citizens, etc., which jointly participate in the community governance by providing services and resources (human, financial, technical, etc.).

- (3) The third part of the model is the collaborative performance, which is the final result of the CGR run, and the collaborative performance contains the impact and adaptation in the original IFCG model. Combined with Emerson et al. (2012)’s explanation of impact and adaptation [11], one of the most important consequences of collaborative governance is to adapt to a complex and changing environment in a manageable

direction. Based on the implementation of collaborative actions, problems are solved (or not) and new findings confirm management practices (or not), generating different challenges or opportunities. In this paper, we argue that impact and adaptation are a description of the results of the operation of a collaborative governance regime as a collaborative outcome or collaborative performance. Such outcomes can be specific, diffuse, and short-term, or they can be broader, cumulative, and long-term impacts. The former is easier to measure and confirm, while the latter is more difficult to verify and assess. For this analysis, the collaborative performance studied in this paper is assessed for specific, dispersed, and short-term outcomes. At the same time, collaborative governance does not necessarily produce good results and may have unintended negative consequences. Aggregative theories of liberal democracy [55] view governance networks as a threat to democratic government and unfortunately blur the otherwise clear boundaries between state and society. Sørensen et al. (2005) provided an answer, i.e., politicians should play a key role in efforts to improve the democratic anchoring of governance networks [24]. Politicians must exercise meta-governance by actively participating in the initial design of the governance network, the internal decision-making process, and the overall framework of the policies that emerge from the governance network. Emerson et al. also suggested that setting common goals for collaborative partners and clarifying the rationale and guidelines for action can avoid unintended negative consequences [11]. The urgency and danger of COVID-19 have led to collaborative partners with the same goal, all committed to achieving effective control of COVID-19. In addition, the government has developed several measures to promote collaborative governance, and multiple actors are involved in the prevention and control of the epidemic to maintain the country's economic development and the return to the healthy functioning of social life. Therefore, the results of the collaborative governance discussed in this paper are benign. In this paper, collaborative performance refers to the process of collaborative governance in which multiple actors, including government agencies, enterprises, NGOs, charities, volunteer groups, and citizens, participate to combat the epidemic in the context of COVID-19, to achieve the economic development and sound functioning of the country's social life through mutual assistance and cooperation among multiple parties. Since the collaborative performance reflects the interactive results of collaborative dynamics and collaborative actions, the evaluation of collaborative performance can both assess the overall operational effectiveness of the collaborative governance regime and provide a test basis for the implementation of collaborative dynamics and collaborative actions.

3.2. Hypothesis

As can be seen in Figure 1, the elements are interrelated and influence each other. Between collaborative dynamics and collaborative performance, several affirm that trust has a significant effect on overall organizational performance [56]. Emerson et al. view the capacity for joint action as a collection of different functional elements that come together to produce effective action as “the link between strategy and results” [11]. Therefore, shared motivation and a capacity for joint action in the model can contribute to collaborative performance, i.e., collaborative motivation can contribute to collaborative performance.

Therefore, we propose the following hypotheses:

Hypothesis 1 (H1). *There is a positive effect of collaborative dynamics on collaborative performance.*

Hypothesis 1a (H1a). *There is a positive effect of shared motivation on collaborative performance.*

Hypothesis 1b (H1b). *There is a positive effect of the capacity for joint action on collaborative performance.*

Between collaborative dynamics and collaborative actions: Emerson et al. proposed, in the IFCG model, that collaborative actions are a direct output of collaborative dynamics [11]. Specifically, collaborative actions are more likely to be implemented if there is collaborative consensus among partners and sufficient collaborative dynamics exist. In the model, shared motivation and the capacity for joint action will maintain actions such as open communication and sharing in the system, which will further increase the level of internal mutual support and communication, thus facilitating the implementation of collaborative actions. Thus, there is a positive influence of collaborative dynamics and collaborative actions.

Therefore, we propose the following hypotheses:

Hypothesis 2 (H2). *There is a positive effect of collaborative dynamics on collaborative actions.*

Hypothesis 2a (H2a). *There is a positive effect of shared motivation on collaborative actions.*

Hypothesis 2b (H2b). *There is a positive effect of capacity for joint action on collaborative actions.*

Between collaborative actions and collaborative performance, Emerson et al. further explained the IFCG model, arguing that collaborative actions will produce intermediate or final results, and then achieve collaborative performance [49]. Collaborative actions are undertaken to produce the desired outcome, which can be achieved when existing or anticipated conditions are not ideal or need to be changed [57]. The purpose of collaborative governance is to achieve cross-border cooperation between people and organizations, and collaborative actions can achieve this cooperation and achieve the desired results. In the model, the effective control of COVID-19 benefits from the cross-border collaboration of such multiple subjects, and achieves cooperation and achieves the expected results through the collaborative actions of multiple parties. Therefore, collaborative actions can promote the generation of collaborative performance.

Therefore, we propose the following hypotheses:

Hypothesis 3 (H3). *There is a positive effect of collaborative actions on collaborative performance.*

Hypothesis 3a (H3a). *There is a positive effect of compliance actions on collaborative performance.*

Hypothesis 3b (H3b). *There is a positive effect of supportive actions on collaborative performance.*

Between collaborative dynamics and collaborative performance, Thomas and Koontz (2011) view collaborative actions as “intermediate” or “end outputs” in order to assess productivity performance [57]. Emerson et al. proposed the proposition that collaborative actions triggered by collaborative dynamics may be closer to the target outcome and that the actions lead to fewer unintended negative consequences less, i.e., produce higher collaborative performance [11]. In the model, the collaborative dynamics are not perfected at the beginning of a public crisis event outbreak, and the government agency initiates the actions, establishes a specialized response agency, pools knowledge and resources, and encourages multiple actors to join the collaborative governance. These collaborative actions become the mediator of collaborative dynamics and collaborative performance. As the incident is gradually brought under control, the collaborative system is gradually improved. Diverse social forces carry out a variety of compliance and supportive actions, such as local management, living services, medical treatment, etc., with residents as the core, and then achieve collaborative results. Thus, collaborative actions play a mediating role between collaborative dynamics and collaborative performance.

Therefore, we propose the following hypothesis:

Hypothesis 4 (H4). *Collaborative actions play a mediating role between collaborative dynamics and collaborative performance.*

CGR unfolds within a systemic context consisting of a range of political, legal, socioeconomic, environmental, and other influences. This external systemic context creates opportunities and constraints and influences the general parameters within which CGR unfolds [11]. In large public crisis response, the operation of collaborative governance regimes varies across countries and regions due to differences in political systems, cultural environments, etc. Different systemic contexts affect the collaborative dynamics and collaborative actions, and the collaborative governance regimes will appear different.

Therefore, we propose the following hypothesis:

Hypothesis 5 (H5). *There is heterogeneity in collaborative governance regimes in different system contexts.*

4. Empirical Analysis

4.1. Questionnaire Design and Distribution

The data used in this paper were obtained by means of questionnaires, all variables involved were borrowed from established scales with targeted modifications in the specific context of COVID-19 prevention and control, and all questions were on a 5-scale Likert scale. Based on the theoretical analysis above, we focused on the influencing factors of shared motivation, capacity for joint action, compliance actions, supportive action, and collaborative performance. Questionnaires focused on these five elements (see Supplementary Materials File S1 for specific questions).

Among them, shared motivation is measured mainly from the existing social capital of the community, including four measurement entries of community belonging, community cohesion, general community trust and reciprocity, and community trust. The capacity for the joint action is mainly measured from the perspective of organizational procedures and institutional arrangements, leadership, knowledge and resources, and includes six measurement entries of the community's emergency response mechanism, information transfer, community self-governance capacity, subsistence economic materials, and epidemic prevention technology. For the measurement of compliance actions, the questionnaire was designed with four measurement entries of compliance actions by enterprises, compliance actions by community property companies, enforcement actions by grassroots government, epidemic prevention and promotion by grassroots government departments, and compliance actions by residents. For the measurement of supportive actions, the questionnaire was designed with six measurement entries on the provision of services by volunteers, resource services by enterprises, NGOs, etc., handling by enterprises involved in epidemics, assistance by government staff, assistance by community self-government organizations, and assistance by community residents. The measurement of collaborative performance, in this paper, refers specifically to the measurement of the effectiveness of community response in COVID-19, which is measured in this section through three main aspects: perceived legitimacy of the system, perceived fairness of the system, and perceived effectiveness of the system. It contains six measurement entries: professionalism of law enforcement personnel, the rationality of epidemic prevention and control measures, fairness of the implementation process and results of system implementation, regularity of the interaction process between epidemic prevention and control personnel and the public, operability of the system, and effectiveness of the system.

The questionnaire has been ethically reviewed and was distributed from October 2021 to December 2021, mainly to Korean and some Chinese university students. Their subjective attitudes and behavioral tendencies toward collaborative governance in the context of COVID-19 are not only an important sample to reflect the overall awareness of the youth group, but also an important reference factor to judge the development and future direction of collaborative governance. In total, 342 questionnaires were returned, and after excluding invalid questionnaires, 287 valid questionnaires were obtained. Among them, 139 questionnaires were valid from Korea, accounting for 48.4% of the total valid sample,

and 148 questionnaires were valid from China, accounting for 51.6% of the total valid sample. The descriptive statistics of the sample are shown in Table 1.

Table 1. Descriptive statistics of the samples from Korea and China.

Variable Name	Variable Options	Total Sample		Korea		China	
		Frequency	%	Frequency	%	Frequency	%
Country	Korea	139	48.4	-	-	-	-
	China	148	51.6	-	-	-	-
Gender	Man	100	65.16	74	53.2	26	17.6
	Woman	187	34.84	65	46.8	122	82.4
Student grade	First year	120	41.81	60	43.2	60	40.5
	Second year	69	24.04	39	28.1	30	20.3
	Third year	44	15.33	20	14.4	24	16.2
	Fourth year	54	18.81	20	14.4	34	23.0
Household income	range 1	123	42.86	54	38.8	69	46.6
	range 2	67	23.35	22	15.8	45	30.4
	range 3	72	25.08	46	33.1	26	17.6
	range 4	20	6.97	13	9.4	7	4.7
	range 5	5	1.74	4	2.9	1	0.7
Diagnosed or not	yes	3	1.05	1	2	1.4	0.7
	no	284	98.95	147	137	98.6	99.3

Note: Household income range 1: less than 20 million (Korea, KRW); less than 50,000 (China, RMB). Household income range 2: 20–40 million (Korea, KRW); 50,000–100,000 (China, RMB). Household income range 3: 40–80 million (Korea, KRW); 100,000–300,000 (China, RMB). Household income range 4: 80–12 million (Korea, KRW); 300,000–500,000 (China, RMB). Household income range 5: 120 million or more (Korea, KRW); 500,000 or more (China, RMB).

4.2. Reliability Analysis of Variables

4.2.1. Descriptive Statistics and Reliability Analysis of Variables

The descriptive statistics and reliability analysis of the variables are shown in Tables 2 and 3. The Cronbach's α values of all variables were greater than the critical level of 0.7. Among them, there were five items of shared motivation with Cronbach's α of 0.832; six items of capacity for joint action with Cronbach's α of 0.964; five items of compliance actions with Cronbach's α of 0.881; and six items of supportive actions with Cronbach's α of 0.964. This indicates that the reliability of each variable is good.

Table 2. Descriptive statistics of variables.

Variables	Variable Description	Mean	Variance
Collaborative Dynamics	Shared Motivation	3.505	0.823
	Capacity for Joint Action	3.691	0.754
Collaborative Actions	Compliance Actions	4.056	0.627
	Supportive Actions	3.488	0.757
Collaborative Performance	-	3.829	0.948
Country	Korea = 1, China = 0	0.48	0.251
Gender	Man = 1, Woman = 0	0.35	0.228
Student grade	First year = 1, Second year = 2, Third year = 3, Fourth year = 4	2.11	1.316
Household income	range 1 = 1, range 2 = 2, range 3 = 3, range 4 = 4, range 5 = 5	2.01	1.119

Note: Household income range 1: less than 20 million (Korea, KRW); less than 50,000 (China, RMB). Household income range 2: 20–40 million (Korea, KRW); 50,000–100,000 (China, RMB). Household income range 3: 40–80 million (Korea, KRW); 100,000–300,000 (China, RMB). Household income range 4: 80–12 million (Korea, KRW); 300,000–500,000 (China, RMB). Household income range 5: 120 million or more (Korea, KRW); 500,000 or more (China, RMB).

Table 3. Reliability analysis.

Variables		Number of Projects	Cronbach Alpha
Collaborative Dynamics	Shared Motivation	4	0.832
	Capacity for Joint Action	6	0.964
Collaborative Actions	Compliance Actions	5	0.881
	Supportive Actions	6	0.866
Collaborative Performance		6	0.948

4.2.2. Validity Analysis

The measurement of the variables involved in this paper was generated by revisions based on previously established scales, which can ensure the content validity of the measurement scale. The study was subjected to exploratory factor analysis (EFA), and the Bartlett's spherical test was significant and suitable for factor analysis. The results of EFA are shown in Table 4, and all the 27 question items were aggregated into a total of five valid factors with eigenvalues greater than 1, and the correspondence between each question item and factor was consistent with the theory.

Table 4. Results of factor analysis.

Variables			Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Collaborative Dynamics	Shared Motivation	Q1-1	0.732				
		Q1-2	0.754				
		Q1-3	0.628				
		Q1-4	0.605				
		Q2-1		0.711			
	Capacity for Joint Action	Q2-2		0.786			
		Q2-3		0.801			
		Q2-4		0.736			
		Q2-5		0.783			
		Q2-6		0.812			
Collaborative Actions	Compliance Actions	Q3-1			0.741		
		Q3-2			0.621		
		Q3-3			0.795		
		Q3-4			0.680		
		Q3-5			0.646		
	Supportive Actions	Q4-1				0.602	
		Q4-2				0.598	
		Q4-3				0.539	
		Q4-4				0.616	
		Q4-5				0.700	
Q4-6				0.617			
Collaborative Performance	Q5-1					0.730	
	Q5-2					0.806	
	Q5-3					0.815	
	Q5-4					0.766	
	Q5-5					0.747	
	Q5-6					0.743	
Proportion of Variance (%)			10.842	18.123	13.148	12.280	19.547
Cumulative Proportion (%)					73.940		
KMO					0.951		
Bartlett's test			Chi-squared test		7096.827	Sig.	0.000

4.2.3. Correlation Analysis

From the correlation coefficient matrix between the variables (Table 5), it is clear that shared motivation, capacity for joint action, compliance actions, supportive actions, and collaborative performance are significantly and positively correlated. These relationships are further tested in the subsequent analysis.

Table 5. Correlation matrix of variables.

Variables	Shared Motivation	Capacity for Joint Action	Compliance Actions	Supportive Actions	Collaborative Performance
shared motivation	1				
capacity for joint action	0.674 **	1			
compliance actions	0.583 **	0.641 **	1		
supportive actions	0.659 **	0.748 **	0.665 **	1	
collaborative performance	0.654 **	0.674 **	0.657 **	0.684 **	1

** $p < 0.01$.

4.3. Empirical Analysis

4.3.1. Regression Results of Collaborative Dynamics and Collaborative Performance

Considering that different variables may have high correlation and it is difficult to determine the unique contribution of a variable by putting the variables into the model at the same time, this paper used hierarchical regression analysis. Hierarchical regression involves placing the variable of interest in the last step into the model to examine the contribution of that variable to the regression equation when the contribution of other variables is excluded.

Firstly, hypothesis testing was conducted for H1, and regression analysis was conducted with collaborative dynamics as a whole as an independent variable and collaborative performance as a dependent variable. Secondly, H1a and H1b were tested, and the regression models were constructed with two dimensions of collaborative dynamics (shared motivation and capacity for joint action) as independent variables and collaborative performance as dependent variables. Table 6 shows the test results. In all regression models, we included gender, grade, and household income as control variables, and set the country as a dummy variable, thus verifying whether different countries have different effects on the dependent variable. M1–M5 are regressions on collaborative performance, with M1 containing only control variables, M2 putting collaborative dynamics on top of M1, M3–M4 putting in two dimensions of collaborative dynamics on top of M1 respectively, and M5 putting in two dimensions of collaborative dynamics at the same time. This allows us to separately determine the unique contribution of a variable to the regression equation and the joint contribution of multiple variables.

The regression analysis of the model M2–M5 shows that the country has a significant impact on the collaborative performance. Under the same conditions, the collaborative performance of South Korea is lower than that of China. M2 showed a significant positive effect of collaborative dynamics ($B = 0.621, p < 0.001$) on collaborative performance; M3 showed a significant positive effect of shared motivation ($B = 0.443, p < 0.001$) on collaborative performance; M4 capacity for joint action ($B = 0.483, p < 0.001$) had a significant positive effect on collaborative performance. When the two variables of shared motivation and ability to act jointly were put into the model simultaneously, M5 showed that both shared motivation ($B = 0.289, p < 0.001$) and capacity for joint action ($B = 0.324, p < 0.001$) had a significant positive effect on collaborative performance, and the abovementioned relationship was further supported. That is, collaborative dynamics has a significant positive effect on collaborative performance, and hypotheses H1, H1a, and H1b are statistically supported. Therefore, the strengthening of collaborative dynamics can promote the improvement of collaborative performance.

Table 6. Regression results of collaborative dynamics on collaborative performance.

Models	M1	M2	M3	M4	M5
Independent variable					
Collaborative Dynamics		0.621 *** (10.082)			
Shared Motivation			0.443 *** (8.381)		0.289 *** (5.128)
Capacity for Joint Action				0.483 *** (8.361)	0.324 *** (5.099)
Control variables					
Country (Dummy variable, Korea = 1, China = 0)	−1.266 *** (−13.289)	−0.630 *** (−10.082)	−0.831 *** (−8.318)	−0.757 *** (−7.220)	−0.633 *** (−6.121)
Gender	0.011 (0.110)	−0.054 (−0.638)	−0.047 (−0.524)	−0.032 (−0.359)	−0.056 (−0.662)
Grade	−0.120 *** (−3.142)	−0.047 (−1.390)	−0.063 (−1.814)	−0.066 (−1.898)	−0.046 (−1.362)
Household income	−0.021 (−0.507)	−0.022 (−0.610)	−0.017 (−0.445)	−0.026 (−0.678)	−0.021 (−0.584)
Constants	4.721 *** (21.217)	0.860 *** (3.726)	1.260 *** (5.557)	1.141 *** (4.866)	2.127 *** (6.625)
R ²	0.435	0.585	0.548	0.547	0.586
Adjusted R ²	0.427	0.578	0.540	0.539	0.577
F	54.229 ***	79.195 ***	68.084 ***	67.96 ***	51.246 ***
Sample size	287	287	287	287	287
D-W	-	1.879	1.821	1.992	1.877
Multicollinearity test	Tolerance minimum: 0.461; VIF max: 2.171				

*** $p < 0.001$.

4.3.2. Regression Results of Collaborative Dynamics and Collaborative Actions

Firstly, we tested H2 by performing a regression analysis with collaborative dynamics as an independent variable and collaborative actions as a dependent variable. Secondly, H2a and H2b were tested, and the regression models were constructed with two dimensions of collaborative dynamics (shared motivation and capacity for joint action) as independent variables and collaborative actions as dependent variables. Table 7 shows the test results. M6–M9 are regressions on collaborative actions, with M6 containing only control variables, M7 putting collaborative dynamics on the basis of M6, and M8–M9 puts two dimensions of collaborative dynamics on top of M6, and M10 puts two dimensions of collaborative dynamics at the same time.

Regression analysis of models M2–M5 showed that there was a significant effect of the country on collaborative actions, and ceteris paribus, Korea had lower collaborative actions than China. M7 showed a significant positive effect of collaborative dynamics ($B = 0.667, p < 0.001$) on collaborative actions; M8 showed a significant positive effect of shared motivation ($B = 0.424, p < 0.001$) on collaborative actions; M9 capacity for joint action ($B = 0.560, p < 0.001$) had a significant positive effect on collaborative actions. When the two variables of shared motivation and capacity for joint action were put into the model simultaneously, M10 showed that both shared motivation ($B = 0.228, p < 0.001$) and capacity for joint action ($B = 0.438, p < 0.001$) had a significant positive effect on collaborative actions, and the above relationship was further supported. That is, collaborative dynamics have a significant positive effect on collaborative actions, and hypotheses H2, H2a, and H2b are statistically supported. Therefore, collaborative dynamics can facilitate the realization of collaborative actions.

Table 7. Regression results of collaborative dynamics on collaborative actions.

Models	M6	M7	M8	M9	M10
Independent variable					
Collaborative Dynamics		0.667 *** (15.123)			
Shared Motivation			0.424 *** (10.161)		0.228 *** (5.486)
Capacity for Joint Action				0.560 *** (13.452)	0.438 *** (9.634)
Control variables					
Country (Dummy variable, Korea = 1, China = 0)	−0.904 *** (−11.485)	−0.221 ** (−2.990)	−0.487 *** (−6.176)	−0.314 *** (−4.165)	−0.219 ** (−2.962)
Gender	0.080 (0.985)	0.010 (0.172)	0.025 (0.362)	0.031 (0.484)	0.012 (0.199)
Grade	−0.099 ** (−3.316)	−0.020 (0.841)	−0.045 (−1.620)	−0.037 (−1.455)	−0.021 (−0.870)
Household income	0.042 (1.224)	0.042 (1.616)	0.047 (2.575)	0.038 (1.386)	0.041 (1.587)
Constants	4.175 *** (22.711)	1.383 *** (6.019)	1.478 *** (8.249)	1.153 *** (6.830)	1.378 *** (5.995)
R ²	0.372	0.654	0.540	0.618	0.655
Adjusted R ²	0.363	0.647	0.532	0.611	0.647
F	41.681 ***	106.009 ***	66.085 ***	90.813 ***	88.531 ***
Sample size	287	287	287	287	287
D–W	–	1.904	1.083	2.083	1.932
Multicollinearity test	Tolerance minimum:0.416; VIF max:2.171				

*** $p < 0.001$, ** $p < 0.01$.

4.3.3. Regression Results of Collaborative Actions and Collaborative Performance

This section begins with a test of H3, with collaborative actions as an independent variable and collaborative performance as a dependent variable for regression analysis. Secondly, H3a and H3b were tested to construct regression models with two dimensions of collaborative actions as independent variables and collaborative performance as dependent variables. Table 8 shows the test results. M11–M15 are regressions on collaborative performance, M1 contains only control variables, M11 puts collaborative actions on the basis of M1, M12–M13 puts in two dimensions of collaborative actions on top of M1, and M14 puts in two dimensions of collaborative actions at the same time.

Regression analysis of models M11–M14 showed that there was a significant effect of the country on collaborative performance, which was lower in Korea than in China, *ceteris paribus*. M11 showed a significant positive effect of collaborative actions ($B = 0.686$, $p < 0.001$) on collaborative performance; M12 showed a significant positive effect of compliance actions ($B = 0.554$, $p < 0.001$) on collaborative performance, M13 supportive actions ($B = 0.507$, $p < 0.001$) had a significant positive effect on collaborative performance. The above relationship is further supported when the two variables of compliance actions and support actions are put into the model at the same time; M14 shows that compliance actions ($B = 0.389$, $p < 0.001$) and support actions ($B = 0.303$, $p < 0.001$) both have a significant positive effect on collaborative performance. That is, collaborative actions have a significant positive effect on collaborative performance, and hypotheses H3, H3a, and H3b are statistically supported. Therefore, the implementation of collaborative actions can contribute to the improvement of collaborative performance.

Table 8. Correlation matrix of variables.

Models	M1	M11	M12	M13	M14
Independent variables					
collaborative actions		0.686 *** (11.541)			
compliance actions			0.554 *** (10.105)		0.389 *** (6.253)
supportive actions				0.507 *** (9.214)	0.303 (4.976)
Control variables					
Country (Dummy variable, Korea = 1, China = 0)	−1.266 *** (−13.289)	−0.646 *** (−0.6.778)	−0.842 *** (−9.166)	−0.750 *** (−7.443)	−0.659 *** (−6.894)
Gender	0.011 (0.110)	−0.044 (−0.543)	−0.057 (−0.672)	−0.012 (−0.138)	−0.051 (−0.619)
Grade	−0.120 *** (−3.142)	−0.052 (−1.625)	−0.079 *** (−2.402)	−0.059 (−1.730)	−0.055 (−1.714)
Household income	−0.021 (−0.507)	−0.050 (−1.452)	−0.067 (−1.838)	−0.026 (−0.708)	−0.056 (−1.605)
Constants	4.721 *** (21.217)	1.855 *** (6.008)	0.702 *** (2.928)	1.123 *** (4.974)	1.825 *** (5.904)
R ²	0.435	0.617	0.585	0.566	0.619
Adjusted R ²	0.427	0.610	0.578	0.558	0.611
F	54.229 ***	90.359 ***	79.361 ***	73.267 ***	75.851 ***
Sample size	287	287	287	287	287
D–W	–	1.923	1.941	1.941	1.924
Multicollinearity test	Tolerance minimum: 0.458; VIF max: 2.183				

*** $p < 0.001$.

4.3.4. Results of the Analysis of the Mediating Effect of Collaborative Actions between Collaborative Dynamics and Collaborative Performance

In this paper, we followed the procedure of Zhao et al. (2010) for testing the mediating effect using the Bootstrap test and corroborating with the Sobel test for comparison to verify the mediating effect [58]. We chose collaborative dynamics as the independent variable, collaborative performance as the dependent variable, and collaborative actions as the mediating variable. The output of the mediating effect test after adding control variables such as country, gender, grade, and household income is shown in Figure 2. The total effect of collaborative dynamics on collaborative performance was significant ($B = 0.621$, $p < 0.001$); the direct effect was significant ($B = 0.296$, $p < 0.001$); and the indirect effect was significant ($B = 0.325$, $p < 0.001$). Therefore, collaborative actions play a partially mediating role between collaborative dynamics and collaborative performance. Meanwhile, the Z value of the Sobel test result was 5.745, $p < 0.001$, and the mediating effect was significant, which further confirms the mediating effect of collaborative actions. Therefore, hypothesis H4 is statistically supported.

4.3.5. Heterogeneity Analysis of CGR in Different System Contexts

In this part, China and Korea are selected as two different system contexts, and the variables and interrelationships between variables in the CGR in China and Korea are compared. In order to test whether there are significant differences between the variables in China and Korea, the mean values of each variable were calculated and T-test was conducted, and the results are shown in Table 9. There were significant differences in shared motivation, capacity for joint action, compliance actions, supportive actions, and collaborative performance in China and Korea ($p < 0.001$). The means of each variable in collaborative governance in Chinese communities were higher than those in Korea. During the epidemic response, China invested more in all aspects of the epidemic response with greater intensity, and China had a more active collaborative governance regime.

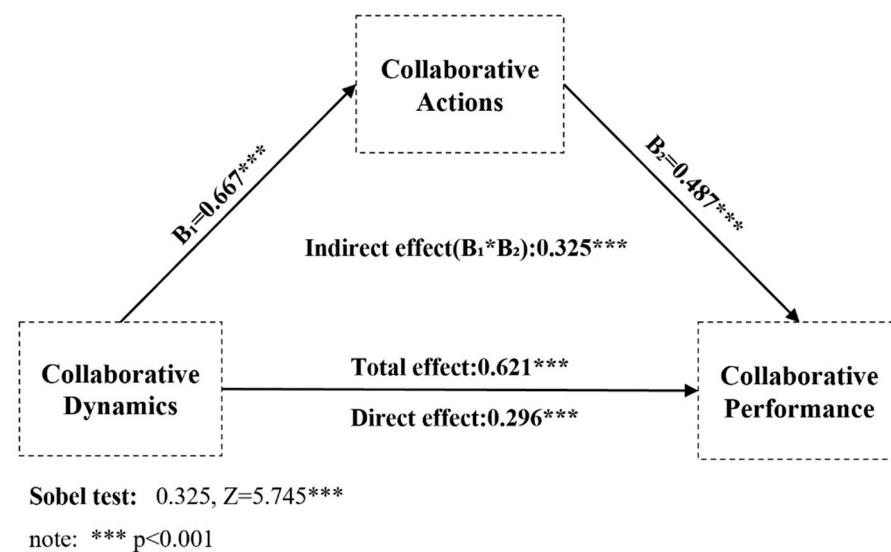


Figure 2. Results of the analysis of the mediating role of collaborative actions between collaborative dynamics and collaborative performance.

Table 9. Comparison results of each variable of the collaborative governance regime in Chinese and Korean communities.

Variable	Country	Sample Size	Mean	Standard Deviation	<i>t</i>	<i>p</i>
Shared Motivation	Korea	139	2.99	0.72	−11.274	0.000
	China	148	3.99	0.79		
Capacity for joint action	Korea	139	3.15	0.56	−13.103	0.000
	China	148	4.20	0.79		
Compliance actions	Korea	139	3.66	0.67	−9.262	0.000
	China	148	4.42	0.72		
Supportive actions	Korea	139	2.97	0.60	−12.086	0.000
	China	148	3.98	0.80		
Collaborative performance	Korea	139	3.18	0.79	−14.206	0.000
	China	148	4.44	0.70		

Regarding the comparison of the relationship between different elements of CGRs in China and Korea, this paper analyzed the heterogeneity of CGRs in the two countries, using China and Korea as two different system contexts with shared motivation and capacity for joint action as examples. With the inclusion of control variables, a regression model was constructed with shared motivation and capacity for joint action as independent variables and collaborative performance as the dependent variable. The regression results are shown in Table 10: shared motivation ($B = 0.198, p < 0.05$) and ability to act jointly ($B = 0.340, p < 0.001$) have a significant positive effect on collaborative performance in China, with the capacity for joint actions playing a greater role in synergy performance; shared motivation ($B = 0.415, p < 0.001$), capacity for joint action ($B = 0.369, p < 0.01$) had a significant positive effect on collaborative performance, and shared motivation and the ability to act jointly contributed to collaborative performance, and both played essentially similar roles. The coefficients of the effects of shared motivation and the ability to act jointly on collaborative performance differed between China and Korea, and hypothesis H5 was statistically supported. Therefore, there is heterogeneity in the collaborative governance regime in different system contexts.

Table 10. Comparison results between China and Korea.

Comparison Group	China	Korea
Independent variable		
Shared Motivation	0.198 * (2.591)	0.415 *** (4.657)
Capacity for Joint Action	0.340 *** (4.539)	0.369 ** (3.216)
Control variables		
Gender	−0.129 (−0.936)	0.031 (0.280)
Grade	−0.017 (−0.377)	−0.110 ** (−2.098)
Household income	−0.000 (0.001)	−0.038 (−0.770)
Constants	2.490 *** (5.995)	1.040 ** (2.560)
R ²	0.289	0.340
Adjusted R ²	0.210	0.316
F	10.165 ***	13.726 ***
Sample size	148	139
D-W	1.792	1.991
Multicollinearity test	Tolerance minimum:0.681; VIF max:1.469	

Note: *** $p < 0.001$, ** $p < 0.01$ * $p < 0.05$.

5. Discussion

The quantitative results of the model suggest that collaborative performance is influenced by collaborative dynamics and collaborative actions, and that there are differences in the effects of the intrinsic elements of collaborative dynamics and collaborative actions on collaborative performance. In this section, in order to verify the abovementioned empirical results and to gain a clearer understanding of the actual situation of multiple community actors responding to the COVID-19 epidemic, we conducted semi-structured interviews with staff members in Chinese and Korean communities who were involved in the prevention and control of the epidemic. These staff members totaled 35 (18 in China and 17 in Korea) and included government staff, community volunteers, community property company staff, community self-governance organization members, NGO staff, and community residents. All respondents have been working on the front line of community grassroots prevention and control of the epidemic since the onset of the new crown pneumonia outbreak and have rich experience in collaborative governance. The interviews covered the following six main areas (see Supplementary Materials File S2 for specific questions): first, the social capital situation of the community; second, the self-help situation of the community at the beginning of the outbreak; third, the changes in epidemic prevention and control when the government initiated emergency response procedures and formed a collaborative governance body; fourth, the participation of multiple subjects and the availability of resources in the process of collaborative governance; fifth, the role of the government when it comes to the collaborative governance process; and sixth, the respondents' suggestions for improving collaborative governance. Based on the interview results, we discuss the potential impact of the model in relation to the empirical results.

First, the effect of the capacity for joint action on collaborative performance is greater than that of shared motivation. In the regressions of shared motivation and capacity for joint action on collaborative performance, the regression coefficients of capacity for joint action were significantly higher than those of shared motivation. Through the interviews, we learned that communities with higher levels of trust and understanding were more motivated to carry out self-help and support actions in the COVID-19 response. When the government activated the emergency plan and formed a collaborative governance body, which attracted active participation of businesses, NGOs, volunteers, and community resi-

dents in the outbreak prevention and control efforts, the communities were more effective in preventing and controlling the outbreak. The capacity for joint action is more relevant and time-sensitive than shared motivation. The timely formation of a scientific and efficient collaborative organization, strong leadership guidance, transparent and open information, knowledge sharing, and swift resource mobilization facilitate unified coordination and dispatch, and allow for a more effective response to the epidemic.

Second, the regression coefficients of compliance actions and supportive actions on collaborative performance are similar. The equivalence of compliance actions and supportive actions in the COVID-19 response can better integrate the resources of the public sector, market, and society to implement collaborative actions across organizational boundaries. This can help overcome the “failure” of the single-entity governance model in urban public safety governance, effectively respond to COVID-19, restore the normal life of residents and the healthy operation of society, and improve the governance performance of community public safety. At the same time, collaborative dynamics can influence collaborative performance both directly and indirectly through collaborative actions. The results of the interviews also corroborate the mediating role of collaborative actions. Through the interviews, we learned that in the earliest stages of the outbreak, when a unified response had not yet been established, the social capital such as trust and understanding that existed in the community beforehand prompted multiple actors to carry out a temporary emergency response and participate directly in the prevention and control of the outbreak in the face of a sudden outbreak. However, it is difficult to respond to a major public emergency such as COVID-19 with this shared motivation, let alone the capacity for joint action. Therefore, interviewees suggested that epidemic prevention and control efforts need to be carried out jointly by multiple subjects to maximize the effectiveness of collaborative governance through collaborative actions (compliance action and supportive action) of government, enterprises, NGOs, volunteers, and residents.

Finally, our empirical results suggested that China’s collaborative performance is significantly higher than that of South Korea. Through the interviews, we learned that the interviewees in both China and Korea believed that the government assumed the role of the initiator of collaborative governance and formed the basic purpose and rules of collaborative governance. Thus, the empirical evidence in this paper also supports the view that government dominates among multiple governance actors [1]. In the response to COVID-19, China invested more resources and actions in epidemic prevention and control relative to Korea. The Chinese government adopted a national approach to fight the epidemic [6], with the government taking the lead and mobilizing all sectors of society to participate in collaborative governance. Based on the results of the comparison between China and Korea, it is clear that China’s capacity for joint action plays a greater role, while Korea’s share motivation and capacity for joint action play an equivalent role. This difference stems from the different political, cultural, legal, and policy system and other system contexts of the two countries. During the pandemic, a collaborative governance regime centered on capacity for joint action can produce better governance results. In the long term, shared motivation paired with the capacity for joint action will achieve better collaborative governance and improve the sustainability of community public safety governance.

6. Conclusions and Implications

As a new paradigm of public administration, the concept of collaborative governance has attracted great attention from scholars and has become the subject of more and more articles and books, and has been applied by many public administration practitioners to the process of government governance as a new way to develop government business. Despite the popularity of the term in research and its widespread use in practice, research on the operational regimes of collaborative governance still lacks empirical extrapolation and systematic analysis. In the particular context of COVID-19, facing the common threat to all human beings, this paper tacitly assumes that the participants of collaborative governance share common goals and values and have reached a collaborative consensus. On this

basis, this paper took the COVID-19 epidemic as the entry point and designed a research model of collaborative governance in the context of COVID-19 based on the IFCG model. In the model, shared motivation and capacity for joint action constitute the collaborative dynamics, which provide the original motivation for the collaborative governance regime; compliance and supportive actions constitute the collaborative actions, which are the intermediate outputs of the collaborative governance regime; and collaborative performance is the final result of the collaborative governance regime. Through the investigation and empirical analysis of COVID-19 responses in China and Korea, this paper concludes that (1) collaborative dynamics can positively contribute to collaborative performance; (2) collaborative dynamics can positively contribute to collaborative actions; (3) collaborative actions can positively contribute to collaborative performance; (4) collaborative actions play a partially mediating role between collaborative dynamics and collaborative performance; and (5) there is heterogeneity in the collaborative governance regimes in different system contexts. In addition, the results of interviews with community outbreak prevention and control staff corroborated the abovementioned findings.

The COVID-19 crisis was a game changer for public administration and leadership because it was revealed that dealing with such uncertain, unpredictable, and volatile problems requires strong governance and that the development and application of strong governance strategies depends on multiparty collaboration [59]. This paper offers the following policy implications. First, collaborative governance can deal with uncertain and unpredictable turbulence. Collaborative governance helps to flexibly mobilize relevant resources, enhance knowledge sharing, stimulate innovation, and provide regimes for joint solutions and subsequent adjustments [60]. The operation of collaborative governance is a dynamic and complex process, and its dynamism is not only reflected in the interactions between different variables, but also in the interactions between different system contexts and collaborative governance regimes. Second, enhancing the capacity for joint action is more conducive to improving collaborative performance. While it is important to build shared motivation in community public safety governance, building relational trust and mutual understanding requires long-term investment, while the capacity for joint action can be improved in a short period. In volatile crises where the stakes are high, collaborative governance can be achieved quickly by strengthening the capacity for joint action. Finally, the role of government in collaborative governance is valued. The sense of responsibility and mission of the public sector, such as government agencies, in the process of epidemic control, drives them to be an important group in the sectoral icebreakers and the initiators and promoters of collaborative governance. Collaborative governance should be initiated and led by the government in a timely manner to attract the participation of diverse subjects, such as the private sector, through authorization and commissioning to quickly promote the realization of collaborative governance.

This study can be extended in the following aspects. Firstly, the operation of collaborative governance regimes is a dynamic and complex process that often involves huge relational perspectives and analysis of collective actions. Such interactive structures and patterns require more complex and systematic methodological approaches for research. More elements of collaborative governance regimes can be incorporated in future studies to evaluate collaborative governance regimes more comprehensively. Secondly, the empirical analysis of collaborative governance regimes using data in this paper is an exploratory approach. Collaborative governance regimes are in a broader context, influenced by and in turn affecting their surroundings, and in a process of continuous adaptation and operation. Therefore, the empirical study of collaborative governance regimes requires more methods, such as network analysis, systems analysis of causal loops, agent-based modeling, and deep learning. Thirdly, the sample scope of this study is limited to the college student groups in Korea and China. In future studies, richer samples can be added to obtain more scientific and comprehensive data to make the empirical results of the article more convincing.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su142114000/s1>, File S1: Survey Questionnaire; File S2: Interview Outlines.

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