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# Transnational Comparative Study on Building Grassroots Emergency Response Capacity: Managerial Economics Perspectives on COVID-19 in China and Singapore

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## ABSTRACT

This study aims to explore how China and Singapore can effectively respond to COVID-19 through emergency capacity building at the grass-roots and societal levels, and analyze the similarities and differences in response strategies of the two countries. First, the experience and lessons of China and Singapore in emergency management of public health incidents are analyzed. Secondly, it describes the model of analyzing the emergency response capacity of the grassroots and society, and explains the application measures of the theory. Thirdly, in the comparison of coping strategies, this paper analyzes the strategies of China and Singapore in social mobilization, information dissemination, resource allocation, social participation and technology application, and evaluates their effects and limitations. Finally, recommendations are made for future research on the economics of outbreak response and management, and the importance of building grassroots and social emergency response capacity is emphasized.

## KEYWORDS

Emergency Capacity; Managerial Economics; Solutions; Qualitative Comparison.

## 1. INTRODUCTION

Since the outbreak of the novel coronavirus (COVID-19) in late 2019, the global public health system has faced unprecedented challenges. This sudden public health crisis has spread rapidly all over the world, not only seriously threatening human life safety and health, but also bringing profound changes and challenges to the global economy, social order and management economics. Under the impact of the epidemic, governments, enterprises and communities have to re-examine their own emergency management systems, especially the construction and improvement of grass-roots emergency response capacity, which has become a key part of the fight against the epidemic.

Management economics, as a discipline that studies how to make effective management and decision-making in the context of limited resources, is particularly important in the context of COVID-19. The rapid spread and high uncertainty of the epidemic require decision-makers to make scientific and reasonable resource allocation and response strategies in a very short period of time to minimize the losses caused by the epidemic. The effective response of grassroots organizations and communities can quickly control the spread of the epidemic, protect people's lives, and provide valuable time and space for government decision-making. Therefore, strengthening emergency response capacity building at the grassroots level and improving the autonomous prevention and control capacity of communities and people have become the focus of common attention of countries around the world.

In this context, as two important economies in Asia, China and Singapore's practice and experience in grassroots emergency capacity building are worthy of in-depth study and reference.

# 2. LITERATURE REVIEW

## 2.1. Relevant Researches

### 2.1.1. Importance of Community Emergency Response Capacity.

As the basic unit of social management, community is an important place for residents to work and live, and is also a front position for disaster prevention and reduction and response to emergencies. Strengthening community emergency response capacity building is of great significance for responding to emergencies in the first time, reducing losses, and ensuring the stable development of community economy and society [1].

### 2.1.2. Elements of Community Emergency Response Capacity

Community emergency capacity includes not only legal regulations, institutional functions, emergency finance and other factors, but also emergency cognitive capacity, information processing capacity, monitoring and early warning capacity, emergency handling capacity, emergency support capacity, etc. [2]. These elements together form the community's comprehensive ability to respond to emergencies.

### 2.1.3. Experience of Crisis Management in Grassroots Communities at Home and Abroad

Developed countries such as the United States, Japan and Singapore have explored their own experience in the process of crisis management in grassroots communities, and formed a stable, practical and equipped grassroots community emergency management model or institutional mechanism applicable to their respective countries [3]. These experiences have important reference significance for the emergency crisis management of grassroots communities in our country.

### 2.1.4. Current Situation and Challenge of Emergency Management at Grassroots Level in China

China's grass-roots emergency management system has been continuously improved in recent years, but it is still vulnerable and inadequate in the face of new situations, new risks and new challenges [4]. This is mainly reflected in the early warning system construction, prevention investment, information processing capacity, monitoring and early warning capacity, emergency response capacity and emergency support capacity.

### 2.1.5. Measures to Strengthen Capacity-building for Emergency Management at the Grass-roots Level

In view of the current situation and challenges of grass-roots emergency management in China, a number of studies have proposed measures such as strengthening the construction of early warning system, increasing prevention input, improving information processing capacity, strengthening monitoring and early warning and emergency handling capacity, and improving emergency support [5]. These initiatives aim to comprehensively enhance the emergency response capacity of grassroots communities to better respond to emergencies.

## 2.2. Summary of Literature Review

Through the review of relevant literature, the following conclusions can be drawn: emergency response capacity building of grass-roots communities is an important guarantee to ensure community stability, build a harmonious community, and promote the sound and rapid economic and social development. Community emergency response capacity includes many components, which work together in the whole process of community response to emergencies. Learning from the advanced experience of crisis management at home and abroad is of great significance for improving the emergency management system of grassroots community in China. While China's grass-roots emergency management system is constantly improving, it still faces many challenges, and it is

necessary to further strengthen the construction of the early warning system, improve the information processing capacity, strengthen the monitoring and early warning and emergency response capacity and other measures to comprehensively improve the grass-roots emergency response capacity.

# 3. COMPARISON OF COPING STRATEGIES BETWEEN CHINA AND SINGAPORE

## 3.1. Research Method

This study uses a comparative case study approach to compare the construction of grassroots and social emergency response capacity in China and Singapore in response to COVID-19 through qualitative analysis. This approach allows for an in-depth understanding of the strategy selection, implementation process and effectiveness of public health crisis management in both countries, so as to extract effective management economics principles and practices. The data collection for this study mainly relied on the following sources: official communiques and policy documents, academic literature and research reports, news reports and media materials, and expert interviews. Data analysis will follow the following steps: content analysis, topic coding, case comparison, theoretical integration.

## 3.2. Strategy Comparison

China quickly set up a nationwide epidemic surveillance system, using big data and artificial intelligence technology to track the development of the epidemic and the movement of people. Strict lockdown measures have been put in place, especially in Wuhan, where the outbreak began. This was followed by an extensive nucleic acid testing and centralized quarantine policy, as well as the use of a health code system to control the movement of people and health status monitoring. The government has mobilized community workers, volunteers and public health workers to carry out epidemic prevention and control work at the grassroots level, including health monitoring, publicity and education, and material distribution.

Singapore has adopted the TraceTogether app and SafeEntry system to trace contacts and manage health claims at entry points. The government provides transparent and consistent information on the situation and preventive measures through multiple channels, including government websites, press releases and social media. Phased social restrictions were implemented, such as "circuit breaker" measures, which restricted social gatherings and non-essential business activities.

By comparing the responses in China and Singapore, we can see both similarities and significant differences in how the two countries have managed the COVID-19 pandemic. China's strategy is more focused on tight controls and extensive monitoring, while Singapore relies more on technology and public participation.

## 3.3. Comparative Result Analysis

### 3.3.1. Strategy Similarities and Differences and Influencing Factors

While both China and Singapore have successfully contained the spread of COVID-19, there are clear differences in their responses in terms of strategic choices and execution. China has adopted stricter and more centralized control measures, emphasizing the leading role of the government in resource mobilization and coordination. Singapore, by contrast, relies on high levels of public participation and widespread use of technology, emphasizing transparency and social responsibility. These differences reflect the differences between the two countries in political systems, cultural traditions and economic structures.

### 3.3.2. Implications for Field of Management Economics

From the perspective of management economics, the experiences of China and Singapore provide important insights on how to mobilize and allocate resources effectively in times of crisis. First, the two cases highlight the importance of government leadership and public-private partnerships in public health crises. Effective crisis management requires not only government decision-making and execution, but also private sector participation and innovation. Second, the response strategies of China and Singapore demonstrate the critical role of technology and information management in the face of public health crises. Singapore has used technology platforms to improve the efficiency of epidemic tracking and information sharing, while China's big data analytics have enhanced the accuracy of epidemic surveillance and resource allocation. Finally, these two cases highlight the importance of social mobilization and public participation in crisis response. Whether through traditional community organizations or the use of modern technology, increasing public awareness and participation in epidemic prevention measures is crucial to improving the effectiveness of policies.

## 4. CONCLUSION

There are significant differences between China and Singapore in their strategies to respond to COVID-19, reflecting differences in their political systems, traditions of social management, levels of technology adoption, and culture of public participation. China quickly implemented strict containment measures and resource mobilization through centralized efforts, while Singapore relied on public cooperation, technological innovation and efficient information management to contain the outbreak. Both models emphasize the synergies between government action and social engagement. The case of Singapore in particular highlights the role of technology in improving the efficiency of outbreak response and promoting public participation, while China also demonstrates the value of big data and artificial intelligence in epidemic surveillance and resource allocation. It is recommended that countries strengthen investment in public health infrastructure, including medical facilities, disease surveillance systems and emergency stocks, to improve their response capacity to future public health crises. Encourage the adoption of digital technologies, such as big data analytics, artificial intelligence and mobile applications, to improve the efficiency of epidemic surveillance, information dissemination and resource allocation.

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