



Research on the Status and Development of Emergency Volunteer Service in Hubei Province

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Abstract. An all-area linkage, three-dimensional and efficient national security protection system is inevitable to improve the national emergency management system. Mobilizing members of society to participate in the emergency management of major crisis events and guiding the general public to participate in emergency volunteer services are key factors for the effective implementation of the national security protection system. This paper analyzes the current situation of the development of emergency volunteer services in Hubei Province, describes the problems found, and proposes relevant thoughts and countermeasures in order to build a more efficient and pro-people emergency volunteer service system and provide reference for government management and the development of emergency volunteer service organizations.

Keywords: Emergency response · Volunteerism · Social governance

1 Introduction

In recent years, China has paid more and more attention to the construction and development of the national emergency system, and relevant laws, regulations and policies have been formulated at the national level to regulate and improve the construction of the emergency system. From the introduction of the “Law of the People’s Republic of China on Emergency Response” in 2007 to the “Outline of the Fourteenth Five-Year Plan of the National Economic and Social Development of the People’s Republic of China and the Vision 2035” in 2021, which is further points out the need to build a unified command, specialized and permanent, responsive and linked emergency management system.

2 The Current Situation and Problems of the Development of Emergency Volunteer Services in Hubei Province

In recent years, Hubei Provincial Government has strengthened the construction of emergency management system and provided policy and institutional guarantee for the development of emergency volunteer services from the top level design. In January 2022, the General Office of the Hubei Provincial Government, in line with the arrangement of the

national “14th Five-Year Plan”. In Wuhan, the capital of Hubei Province, coordinate with the Central Propaganda Department and the Central Civilization Office to carry out “volunteer service care action”, and support Wuhan City to recruit 20,000 volunteers to serve community residents. There are a large number of organizations carrying out emergency volunteer activities, including official organizations such as the Wuhan Emergency Information Monitoring and Warning Center and private organizations such as the Blue Sky Rescue Team, the Wuhan Caring Team, the Wuhan Rebirth Emergency Rescue Team, and the Wuhan Merit Youth Volunteer Service Center. During the fight against the new crown pneumonia epidemic, various local social organizations in Hubei Province actively mobilized their resources and strength to assist Wuhan, and emergency volunteer services were developed. Between January and July 2021 alone, nearly 30,000 volunteer organizations and more than 610,000 volunteers in the province participated in epidemic prevention and control activities, and emergency volunteer activities played a major role in the fight against the epidemic.

There are also unscrupulous elements who take advantage of this “information gap” to cheat the uninformed public of money and overdraw public trust, which has a negative impact on the credibility of the government and the image of volunteer organizations. Some of the content displayed on Hubei Emergency Management (<https://www.hubei.gov.cn/yj/yjmn/>) and Hubei Emergency Information Network (<http://hbyjxxw.cnhubei.com/>) overlap. The scope of emergency-related information dissemination is limited, the audience group is small, and the attention and hotness of both the official microblog and the official ShakeYin number are not high. The official microblog of Hubei Emergency Management Department has 18,000 fans, and as of November 23, 2022, 13,308 tweets have been published, with 26,000 retweets and comments and likes; the official ShakeYin number of Hubei Emergency Management has 28,000 fans, and as of November 23, 2022, a total of 483 entries were released, and the number of likes was 491,000. In general, at the time of vigorous development of new media, the design of the main emergency official information release platform boards in Hubei Province fails to closely contact the actual development of reality, the release content is relatively single, and there is a large overlap of information among websites. The use of new media technology is not effective enough to provide the public with effective knowledge and skills, making it difficult to achieve qualitative development.

At present, according to data released by the Hubei Provincial Emergency Management Department, the provincial capital city of Wuhan has 287 registered rescue teams and 6,784 rescue volunteers; followed by Yichang City, with 173 rescue teams and 5,251 rescue volunteers; the least number is Tianmen City, with only 11 rescue teams and a rescue volunteer population of 112 people. According to the statistical table of environmental emergencies in Hubei Province in 2021 (the first half of the year) released by the Department of Ecology and Environment of Hubei Province, among the 15 environmental emergencies that occurred in the first half of 2021, 3 occurred in Huangshi; 3 in Jingmen; 2 in Yichang; 2 in Huanggang; 1 in Suizhou; 1 in Qianjiang; 1 in Shiyan; 1 in Jingzhou; and 1 in Xiantao. According to the data released by the Hubei Provincial Emergency Management Department, the number of rescue teams and the total number of rescue workers in Hubei Province are 1292 and 32142 respectively, of which the number of rescue teams and the total number of workers in Wuhan City are located in the

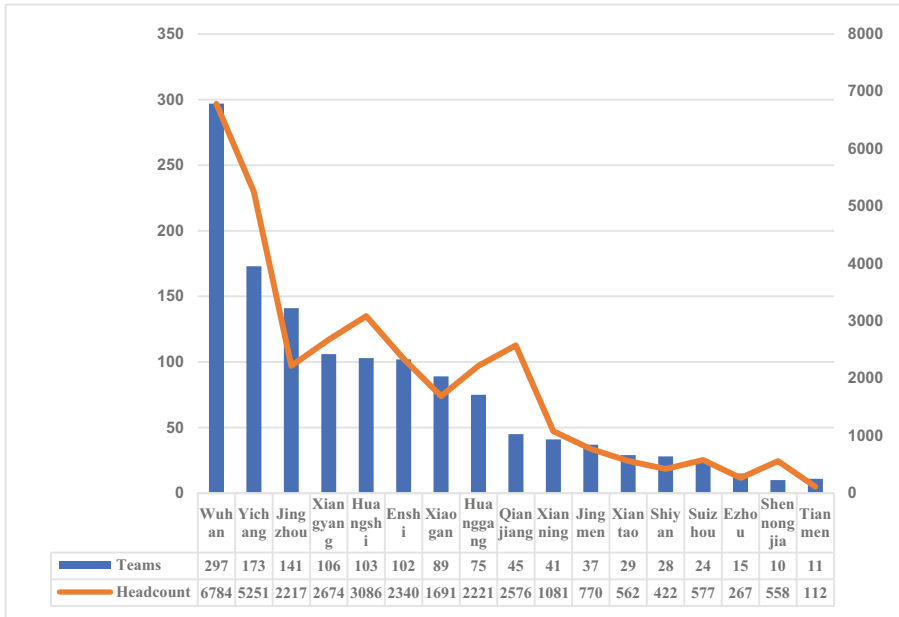


Fig. 1. Number and total number of rescue teams in Hubei Province

first place in the province, 297 and 6784 respectively. The number and total number of rescue teams in other municipalities are shown in Fig. 1. (Data from Hubei Emergency Management Department website: <http://yjt.hubei.gov.cn/>) Resources are mainly concentrated in Wuhan, the provincial capital, and related emergency services are difficult to secure.

3 Modeling and Countermeasure Suggestions

3.1 Modeling

From this we assume, by building model assumptions, that the indicator of the number of volunteer rescue teams in a city is roughly influenced by the city’s GDP (x_1), the population size (x_2), the number of emergencies (x_3), and the total number of volunteers (x_4) and other 4 factors. There are two methods of statistics: ①Statistics of Wuhan’s GDP, population size, number of emergencies, and total number of volunteers in recent years. ②Statistics of GDP, number of population, number of occurrences of emergencies, and total number of volunteers in 2022 in areas with a better volunteer rescue team system (such as Beijing, Shanghai, Hangzhou, Guangzhou, Shenzhen, Chongqing, Wuhan, Chengdu, Changsha, and other cities), and then as a basis for adding the number of volunteer service teams in other urban areas in Hubei Province:

- (1) Here we choose the GDP, population size, number of emergencies, and total number of volunteers in Wuhan in recent years as the data for the study. In order to study what degree of influence these four factors have on the number of volunteer rescue

service teams respectively, I chose to use Spearman’s correlation coefficient method (ignoring the mutual influence between factors here), which is applicable to the correlation analysis between two quantitative variables or fixed-order variables, using the rank order magnitude of the two variables for linear correlation analysis, with no requirement on the distribution of the original variables. Analysis of results.

1. The existence of a statistically significant relationship between XY was first tested to determine whether the p-value presented significance ($p < 0.05$).
 2. If it shows significance, it means that there is a correlation between the two variables, and vice versa, there is no correlation between the two variables.
 3. Analyze the positive and negative direction of the correlation coefficient and the degree of correlation, as shown in Fig. 2.
- (2) The relevance of the four factors to the number of volunteer rescue service teams will be compared separately to determine the importance of the four factors to the number of volunteer service teams, and then compare the importance between the two factors, see Table 1.

Then the weights of each of the four factors are sought. Here we use AHP hierarchical analysis, which is a decision making method that decomposes the elements always related to decision making into levels such as objectives, criteria and solutions, on top of which some more complex and ambiguous problems are analyzed qualitatively and quantitatively. The specific process is shown in Fig. 3.

Using Santy’s 1–9 scale method, the judgment matrix for each level of indicators is constructed as follows. Secondary indicator judgment matrix.

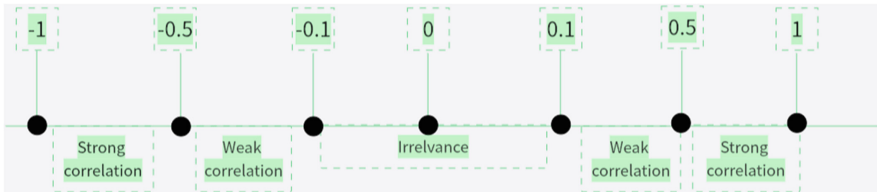


Fig. 2. Correlation degree chart

Table 1. Santy’s scale of 1–9

Factor i relative to factor j	Quantified values
Equally important	1
Slightly more important	3
Stronger and more important	5
Strongly Important	7
Extremely important	9
Intermediate value of two adjacent judgments	2, 4, 6, 8

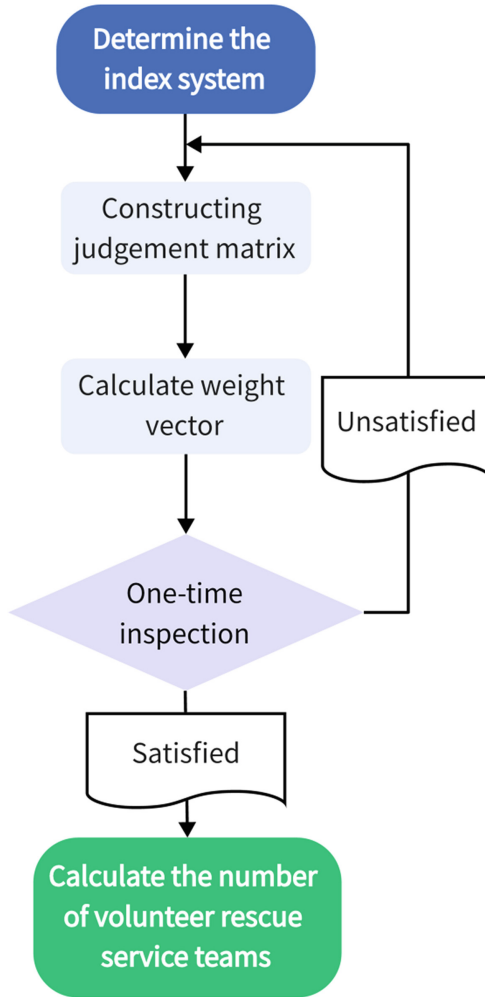


Fig. 3. Flow chart of hierarchical analysis method

$A =$ where x_1 ; x_1 indicates the degree of importance between two two secondary indicators. ($i = 1, 2, 3, 4; j = 1, 2, 3, 4$).

- (3) Finally, using Spsspro to solve, the weights of GDP are calculated as x_1 The weights of the number of population are c_2 and the number of emergencies c_3 and the weight of the total number of volunteers c_4, \dots

So the number of volunteer service teams in each city $N_i = x_1, i = 1, 2, 3, \dots$

3.2 Countermeasure Suggestions

Government-society coordination is an important element of emergency volunteer services and an effective bridge between the government and society in emergency situations, so it should deepen the government's dominance and smooth the government-society coordination mechanism. Pay attention to guiding the transformation of the public's concept from "I want to participate" to "I want to participate", encouraging and guiding the public to participate in the construction of public safety and emergency management system in an orderly manner, and helping to build a social governance pattern of common construction and governance.

In improving the synergy mechanism of government-society cooperation, we should also pay attention to summarize past experiences, use information technology to establish a big data platform, build a multi-party synergy mechanism, collect and organize data from multiple parties, find commonalities and differences in time, and form emergency plans for different emergencies. At the same time, we should actively use new media technology to operate official microblogs, official ShakeYin and WeChat public numbers, video numbers, etc., to spread more novel and practical content, so that the public can feel the importance of emergency in their daily lives and make the emergency construction more "grounded". The staffing of professional teams should be scientific and reasonable, fully guaranteeing the reasonable needs of professionals, appropriately raising salaries and innovating other incentives to enhance the sense of belonging of talents.

4 Conclusion and Outlook

The new situation has brought certain challenges but also new opportunities to the construction of the emergency volunteer service system in Hubei Province. Breaking the existing shackles and exploring the future development path plays a vital role in the improvement of the emergency volunteer service system in Hubei Province, which has far-reaching significance for enhancing social emergency response capacity, maintaining social stability and solving residents' emergency needs.

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