

Crisis Management of Public Emergencies from the Perspective of Bounded Rationality

—Take Gansu Marathon as an Example

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Abstract: In recent years, there has been a surge in China's marathon cross-country race, which has not only stimulated sports enthusiasm, but also brought casualties, and the problem of crisis management has gradually emerged. The time, information and resources of public emergencies are limited, effective crisis management can reduce losses, and the essence of crisis management is crisis decision-making, and crisis monitoring and crisis early warning are the premise of scientific crisis decision-making. Taking the cross-country event of Gansu Marathon as an example, this paper studies and analyzes the problems existing in the crisis management of public events in China and the root causes of the problems from the perspective of Simon's bounded rationality. It also puts forward some suggestions on the optimization of crisis management from the aspects of crisis monitoring, crisis early warning and crisis decision-making.

Keywords: Bounded rationality; Public emergencies; Crisis management; Crisis decision-making

1 Research background

China's policy on public emergencies was formed relatively late. In 2006, the State Council issued the "National General Emergency Plan for Public emergencies", which clearly stipulates the classification and classification of public emergencies, information disclosure, basic security work and so on.

In recent years, marathon events in China have shown a blowout development. according to the data of Asian cross-country magazine, the number of marathon events in China has increased sharply since 2014. Previously, there were no more than 20 cross-country events per year, 171 in 2015, and 359, 312, 395 and 481 in 2016-2019 respectively. The soaring number of marathon events, on the one hand, can stimulate people's enthusiasm for sports and promote economic development, but on the other hand, China's ability to hold large-scale cross-country running events is not yet mature, casualties occur frequently, and the risk of the event is extremely high.

The fourth Yellow River Stone Forest Mountain Marathon 100 km Cross-country Marathon was held in Jingtai County, Baiyin City, Gansu Province on May 22, 2021. After the start of the competition, hail, freezing rain and strong winds suddenly appeared in the high-altitude stage, resulting in the loss of temperature and contact of the contestants. A total of 172 participants took part in the competition and 21 people were killed. The sudden extreme weather at high altitude, coupled with the lack of security and early warning before the game, and the lack of a perfect crisis management decision-making system after the game, and other complex factors led to unfortunate events.

2 Theoretical bases

Simon questioned the "completely rational economic man", thinking that people's cognitive ability is limited and will be affected by various factors, and that there can be no "complete rationality" in real life, but should be "limited

rationality”. There will be no “optimal decision-making”, replaced by “satisfactory decision-making”, that is, to achieve acceptable economic goals while minimizing complexity and risks.

2.1 Procedural decision-making and non-procedural decision-making.

Simon divides decision-making into two types: procedural decision-making and non-procedural decision-making, that is, structured problems and unstructured problems. Procedural decision-making refers to a well-structured problem, which is usually repeated many times, and can be solved by fixed procedures and specific rules. Non-procedural decision-making refers to unstructured problems with novel, vague and incomplete information, which are generally complex problems that have never appeared or appeared but have not been clearly understood.

In the marathon, the fixed information such as traffic route, topography and population distribution within the scope of the race belongs to procedural decision-making, while the uncertain information such as extreme weather, casualties and disaster relief plan belongs to non-procedural decision-making.

2.2 Fact judgment and value judgment.

In order to better understand the decision-making process of managers, Simon puts forward the elements of decision-making, which are divided into factual elements and value elements.

Because the organization has its goals, the decision-making process can be seen as a process of solving two problems: the choice of goals and the realization of goals [2]. The choice of the goal is the value judgment, and the realization of the goal is the fact judgment, that is, the means to achieve the goal.

Because sudden public management events have the characteristics of tight time, strong destructiveness and high uncertainty, the essence of crisis management is non-procedural decision-making.

3 The problems existing in the crisis management of public emergencies.

3.1 High frequency of casualty accidents.

The mountain marathon is different from the marathon held in the city, the geographical environment and weather conditions are important influencing factors, but the uncertainty is very strong, so the mountain cross-country race is more dangerous and difficult, but also brings high incidence of casualties. In 2017, two sudden heatstroke deaths occurred in the Beijing Lingshan cross-country race in one day. In 2018, a female athlete in the Xiaoxiang international cross-country race fell due to rain and died. In 2021, a runner in the Wumeng Mountain cross-country race lost his temperature, which delayed the best rescue time because of the mountain collapse. The 2021 Gansu Marathon was one of the worst disasters in China, killing 21 people, including a number of domestic marathon leaders.

3.2 The effectiveness of the emergency plan is low

Often in the preparatory stage of the event, the emergency plan is most easily ignored, mainly reflected in three aspects: first, the emergency plan is weak in pertinence; second, the utility and operability of the emergency plan are low; third, the government departments of the organizers lack the review of the emergency plan. The Gansu Marathon was hosted by the government of Baiyin City, Gansu Province, and operated by Gansu Shengjing Sports and Culture Development Co., Ltd. in an interview after the incident, the government said it was in charge of the company, and the relevant departments were not aware of the emergency plan.

3.3 When the risk occurs, the rescue efficiency is low.

For sudden crisis, the low efficiency of rescue is a fatal problem. There are two prerequisites for effective rescue, one is an adequate emergency plan, and the other is a professional event organization and rescue team. In the Gansu Marathon, there was unusually windy weather before the start of the race, but the person in charge of the event did not call it off in time. At the time of the crisis, the rescue team did not arrive at the scene as time was tight and the weather

and terrain factors were complex.

4 The reasons leading to the present situation of crisis management of public emergencies

4.1 Crisis monitoring is not in place and the security mechanism is not sound.

Crisis monitoring in cross-country races includes weather monitoring, special terrain monitoring and so on. The security mechanism covers a wide range, from the health protection of the players to the stability of the external environment, is the most basic requirement for a game.

The direct cause of the Gansu Marathon is that the runners encountered extreme weather in the most intense and difficult stage, resulting in acute temperature loss and death. In terms of crisis monitoring, the event organization did not monitor the development and changes of the weather in advance. In terms of safety and health protection, first of all, in violation of the regulations, the event organization did not set up a supply point in accordance with the requirements of 5 to 8 kilometers, and did not carry out equipment requirements for the contestants; secondly, the GPS signal allocated to each contestant was poor, and the contestants could not call for help in time.

4.2 The crisis early warning is not perfect, and the risk prevention consciousness of the event organization is weak.

There are many reasons for the low effectiveness of the emergency plan and the failure to achieve the expected goals. First, the formulation of emergency plans is lack of purpose and pertinence, such as the Gansu Marathon is characterized by high altitude and changeable weather; second, the event organization has a weak awareness of risk prevention, lack of emergency drills, and no problems are found before the race; third, the supervision of relevant government departments is not in place, lack of crisis early warning and risk assessment of emergency plans.

4.3 Crisis decision-making is not timely, and there is a lack of professionalism in the organization of events and rescue teams.

Whether crisis decision-making is reasonable or not depends on professionalism and decision-making ability. The event organization did not provide effective crisis monitoring and emergency plans, resulting in the crisis when the rescue team was affected by a variety of factors, unable to determine the rescue plan in time, which directly led to the increase of rescue time. In addition, the rescue team lacks emergency drills and has low ability to control the new terrain, so it is difficult to make reasonable decisions.

5 Suggestions on the optimization of crisis management of public emergencies.

5.1 Strengthening risk crisis monitoring and gradually structuring non-procedural decision-making.

Crisis monitoring is not only the most critical link of crisis management before the event, but also the necessary foundation, through scientific methods to monitor a variety of factors that may lead to the crisis, find the problem in advance and solve the problem in time. Effective crisis monitoring is the key to the success of crisis management [3].

Crisis management is a typical non-procedural decision-making, effective crisis monitoring can reduce the uncertainty of the crisis to a certain extent. In the Gansu Marathon, if the event organization can strengthen risk crisis monitoring, conduct research and judgment according to the weather conditions of the day, and suspend the race in time, it will avoid accidents from the root causes.

Although the extreme weather is a sudden event, the relevant government departments and national cross-country

race organizations can try to summarize the rules from many crises of different degrees, and gradually structure the non-procedural decision-making through a great deal of analysis and research. form an effective fixed model to solve the problem. But at the same time, it should be noted that crisis monitoring is not a thing once and for all, and the relevant departments should monitor it in real time, constantly find problems and update the data of crisis events[4] to ensure that crisis monitoring is more accurate and effective.

5.2 Establish crisis early warning and emergency rehearsal mechanism and define organizational objectives.

Crisis early warning is an important preventive measure before the occurrence of danger, which can help the government and event organizations to have a full assessment of various forms of crisis in advance.

Human behavior is purposeful, and every activity is purposeful. In order to achieve the goal, corresponding measures should be taken. In the whole organizational level, the highest goal needs to be accomplished step by step, forming a hierarchical system of goals[5]. Therefore, whether it is the emergency plan or the rehearsal mechanism, the organization first determines a highest goal, and this goal belongs to the value element of Simon's decision-making elements. In a sudden crisis, important information is likely to be ignored and it is difficult to make an optimal decision. In this case, the efficiency standard should be followed, and when two options with the same resources are encountered, the most cost-effective option should be selected, that is, satisfactory decision-making.

5.3 Strengthen organizational professional training and combine factual judgment with value judgment.

Crisis decision-making is the core of crisis management, based on the full protection of early crisis monitoring, crisis early warning and emergency plans, crisis decision-making can be more accurate and reasonable. In the face of crisis events, while striving for the maximization of overall interests, we cannot completely copy the emergency plan. Decision-makers should have the ability to adapt and learn to change strategies flexibly according to different situations. These decisions belong to value judgment.

After making a decision, the scientific nature of the decision can be detected according to whether the means taken by the decision can effectively achieve the goal, because the means taken to achieve the goal are factual elements. Simon believes that the factual elements can be simply divided into two parts: the decision-making technology and knowledge that help to deal with various situations, and the relevant information reflected by the environment [6]. Assuming that the organizational goal of the marathon crisis is to rescue the injured runners as soon as possible, then for the event organization, decision-making techniques and knowledge can be obtained through the accumulation of experience and training, and environmental information can detect the terrain in advance to effectively achieve the goal.

6 Conclusion

Based on Simon's theory of bounded rationality, the essence of crisis management is crisis decision-making, and effective crisis decision-making needs to be based on effective crisis monitoring, crisis early warning and emergency plans, and crisis management is non-procedural decision-making. very complicated. This requires the organization of the event and the relevant government departments to clearly define the organizational objectives and the objectives of each stage, fully prepare the factual elements, and collect procedural issues such as traffic conditions, topography, population distribution and so on in the preparation stage of the competition. to provide resource guarantee for subsequent non-procedural decision-making, at the same time, we should study and judge the possible crisis situation, improve the emergency plan and conduct drills. When a crisis occurs, it tests the crisis response ability and professionalism of decision-makers, makes a scientific and reasonable value judgment, and chooses a satisfactory decision. An effective crisis management requires the full preparation of multiple stages and the cooperation of organizational personnel, and the most important thing is a scientific and reasonable crisis decision-making in order to achieve good expected results.

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